International Journal of Home Economics, Hospitality and Allied Research, 1(1):

128-137.

DOI: 10.5281/zenodo.6921156 Received: April 20, 2022 Revised: July 14, 2022 Accepted: July 29, 2022 Published: July 31, 2022

Page | 128

Original Research Report

# Assessment of Food Quality, Perceived Value, and Brand Image as Determinants of Brand Switching among Dinners in Food Service Establishments in Umuahia Metropolis, Abia State, Nigeria

Iheanyi B. Anyanwu<sup>1</sup>\*, Magret N. Ezeaku<sup>2</sup>

\*Correspondence: Iheanyi B. Anyanwu, Department of Hospitality Management and Tourism, Michael Okpara University of Agriculture, Umudike, Nigeria (E-mail: ibbanyanwu@gmail.com).

**Abstract:** This study sought to assess food quality, perceived value, and brand image as determinants of brand switching in food service establishments in Umuahia metropolis Abia State, Nigeria. It was a descriptive survey research in which three specific objectives and three research hypotheses guided the study. The researchers purposively used 300 dinners of six reputable food service establishments in the study area as sample size. The research instrument used for data collection was a questionnaire on a 4-point scale. Descriptive and inferential statistics on SPSS version 25 were used to analyze the data generated. Findings revealed that, the independent variables; food quality, perceived value, and brand image have negative relationships with brand switching as indicated below by their respective coefficient values: food quality (-0.05429), perceived value (-0.0098) and brand image (-0.0615). Based on the findings, it is concluded that the independent variables under study have negative relationships with the dependent variable-brand switching. It is recommended among others that operators of food service establishments are to ensure that the quality of their menu offerings meets the physiological needs of the consumers, ensure that there is continuous improvement in all facets of their operations and build an image that portrays their operations in good light and improves customer-brand relationship.

Keywords: Brand, Dinners, Food, Image, Perceived value, Quality, Service

<sup>&</sup>lt;sup>1</sup>Department of Hospitality Management and Tourism, Michael Okpara University of Agriculture, Umudike, Nigeria

<sup>&</sup>lt;sup>2</sup>Department of Home Economics and Hospitality Management Education, University of Nigeria, Nsukka, Nigeria



#### 1. Introduction

Understanding the consumer, consumer behavior, and the dynamics of consumer tastes have attracted and continued to attract research interests in an attempt to at least unearth the reasons as to why consumers act the way they do. The unpredictability of consumer behavior has kept managers and operators of business including those in the food service sector on their toes such that a lot of financial resources are expended daily to keep customers and prevent them from joining rival establishments (brand switching). Therefore, the ultimate target of food service operators should be to gain and maintain customer loyalty which guarantees constant sales, increased market share, and positive customer attitude. Increasing the market share means persuading competitors' customers with low/weak loyalty-based opinions and beliefs to switch. Brand switching is most likely to occur in any market with multiple alternatives and inter-purchase frequencies. This is typical of food service market that is characterized with strikingly similar alternatives in terms of menu offerings. Notably, the market for food service is very dynamic considering the degree and rate of change and innovations in menu offerings these days. Major food service companies in high demand leverage their competitive edge to enable them maintain their positions in the market and a positive brand image to explore new revenue streams and most importantly to achieve a sustainable product differentiation to drive sales. Brand switching has remained a reoccurring decimal in the annals of business occasioned by market disruptions and other major events occurring in product and service markets that threaten customer-brand relationships. Brand switching occurs when consumers are motivated to review available alternatives in the market due to competitive activities (Appaih, Ozuem & Howell, 2017). Socially, switching occurs when a customer's belief in a brand is externally influenced within the social setting (Gartner, 2016). Thus, it can be said that brand switching is the process of being loyal to one product/service and moving over to an alternative or rival due to dissatisfaction or any other problem. Brand switching indicates that the behavior of consumers varies on the basis of their satisfaction levels with the service providers or companies. When consumers move from one brand to another, building a picture of a likely brand switching behavior occurs.

Consumer satisfaction or dissatisfaction with a product or service can occur on account of mismatch between price and value, customer service, food quality, brand fatigue, brand image, perceived aesthetic quality among others as these factors can alternate the switching tendency (Nagarajan & Jafersadhiq, 2019) and might influence customer-brand relationships in food service operations. Brand switching trends can be negative when associated with customer defection or positive when it is associated with customer adoption or acquisition (Nikic 2012). Perceived food quality, perceived value and perceived brand image can arouse the need for consumers to seek for variety (switching) in food service operations, particularly, with consumers who have low satisfaction and low loyalty. Yu, Wu, Chiao and Tai (2005) argue that as the features, quality, and appearance of products and services become increasingly similar, customers are more likely to exhibit fickle and non-loyal purchasing behaviors – they switch. Researchers have developed models and perspectives in an attempt to understand and explain the motives behind brand switching; Utility-Driven Perspective: holds the view that consumers are increasingly likely to switch brand if they perceive that a new product or service would bring them greater utility (benefit, value) than the incumbent product/service (Douglas & Connor, 2003; Kim & Jin 2002; Kang & James, 2004). Usually, it is based on the previous experience the consumer may have had with the current product

Page | 129



or service which may have been found to be unpleasant and unsatisfactory, thus making switching justifiable. By implication, the product or service features and attributes as well as the perceived benefits and image of the company could serve as a yardstick to switch brand. However, it can be argued that consumers may switch brand for other reasons other than the satisfaction to be derived from a product/service. For example, a consumer may decide to switch to a new food service brand because of the desire for variety. Variety seeking (avoidance) is a determining factor in brand switching (Nikic 2012) and it is seen as the phenomenon of an individual consumer switching brands (or repeat buying) induced by the utility (or disutility) derived from the change itself, irrespective of the brand switched to or from. Accordingly, the variety seeking consumers exhibit a tendency to switch in order to satisfy their need for change. This behavioral predisposition is termed 'variety drive' since what is desired is not a new or unfamiliar experience but simply a change of pace (Nikic 2012). Hence, variety seeking is caused by intrinsic motivation which drives the individual to try something different because the act itself is perceived as being inherently rewarding. Consumers often engage in such behaviors out of boredom or satiation with the product attributes (product/service fatigue) (Nikic 2012). Consequently, variety seeking implies that the probability of choosing the same brand as previously purchased on the next purchase occasion decreases while the probability of choosing a different brand increases. This means that a consumer might defect if brand switching is perceived to be rewarding in itself regardless of the utility derived from consuming the present product/service.

Page | 130

Process-driven perspective suggests that brand switching is a psychological process providing psychological benefits to the consumer. Consumers are not very concerned about the benefits of the switching decision but tend to demonstrate flexibility in the choices they make (Lei et al., 2012). Social Mobility perspective: holds the view that consumers switch brands as a way of expressing themselves. Kim and Jin (2002) view this perspective as a shift away from the functional utility maximization perspective. It hinges on the social identity theory and takes into cognizance the socio-psychological factors that motivate a consumer to switch brand. In essence, it means that in an attempt for consumers to achieve their ideal self or move away from their actual self to the ideal or ought self, they would switch brands. Product features and characteristics are likely to affect exploratory tendencies such as brand switching proponents and innovations in product contexts with large number of available alternatives and a short inter-purchase frequency. These characteristics may include product involvement, perceived risks, brand loyalty, image, perceived value, perceived brand differentiation/similarity, hedonism, strength of preference among others. Individuals who are involved with a product/service are said to have a narrow latitude acceptance, thus are unlikely to be persuaded to switch (Appaih, Ozuem, & Howel, 2019). Further, high perceived risk indicates that individuals are concerned with losses resulting from their purchases, which leads to avoidance tendencies and behavior (i.e commitment to a brand and repeat purchase behaviors) as consumers are more often motivated to avoid mistakes (losses) than to maximize utility in purchases (Appaih, et al., 2019).

Findings of several anterior researches in varied industries have indeed suggested that several factors influence brand switching: product quality, customer satisfaction, and brand trust (Nezakati, Kuan & Asgari 2011); physical surrounding, service quality and food quality (Ahmad, Ghazali & Othman, 2013); food quality, service quality, atmospheric quality, product price, brand image and



perceived value (Sefian, Jaini, Sharudin & Abdullah, 2013); core service failure, service encounter failure, employee responses to service failures, pricing, inconvenience, competitor attraction, ethical issues and involuntary switching (Nordman, 2004); brand name, reputation, cost, convenience, consistency and quality (Brady & Cronin 2001) among others. A study by Nagarajan and Jafersadhiq (2019) determined brand switching factors of millennial customers on toiletries in which 100 millennial customers served as respondents in India. Data generated through questionnaire were analyzed using descriptive and inferential statistics. Findings revealed that corporate image, trust, quality, and switching cost influence brand switching. Findings of similar studies by Baker and Cameron (2016); Choi, Cho, Lee, Lee, and Kim (2004); and Brady and Cronin (2001) carried out in different sectors and economies of the world are in agreement with these results.

Page | 131

Competition in the food service sector continues to increase on a daily basis as new brands join the market. The intensity of competition in the sector means that operators of these establishments must place high premium on customer satisfaction thereby increasing switching costs. Observations have shown however that customers of food service establishments in Nigeria are seemingly savvy, sophisticated, and largely choosy in the choice of food service outfit. Moreover, with increased competition among food service establishments and the growing health consciousness of customers, the need to be more conscious of the quality of the menu offerings, perceived value, as well as the image of the establishment has heightened since customers are believed to act as they perceive. A lot of studies have been carried out to determine the influencing factors to brand switching from different stand points and perspectives in regions with different cultural, environmental, and socioeconomic specifics (Ahmad, et al, 2013; Akbar & Alaudeen, 2012; Appaih, et al., 2017; 2019; De Ruyter, Wetzels, & Bloemer, 1998; Gwinner, Gremler, & Bitner, 1998; Nagarajan & Jafersadhiq, 2019; Tabassum & Rahman, 2012; Woodruff, 1997). These researchers are worried that operators of food service establishments in Umuahia metropolis might be ignorant of the influencing factors to brand switching (customer defection) on account of perceived literature gap, as not much has been done empirically on the subject matter as well as differences in the findings of scholars on the subject matter, hence it is not yet clear which factors that might influence brand switching in food service operations. This motivated this present study.

#### 1.1. Objectives of the Study

The main objective of the study is to determine the influence of food quality, perceived value, and brand image on brand switching among dinners of food service establishments in Umuahia metropolis. Specifically, the study sought to determine how brand switching is influenced by:

- (i) Food quality
- (ii) Perceived value
- (iii)Brand image

# 1.2. Research Hypotheses

The following research hypotheses guided the study:

H01: Food quality does not significantly influence brand switching among dinners of food service establishments in the study area.

H02: Perceived value has no significant influence on brand switching among dinners of food service establishments in the study area.

H03: Brand image does not significantly influence brand switching among dinners of food



service establishments in the study area.

#### 2. Materials and Methods

#### 2.1.Design for the Study

The study adopted a descriptive survey research design and it was considered suitable because it helps to study people's attitudes, motivation and other characteristics.

Page | 132

#### 2.1.1. Ethics Approval of Research

The study was carried out with informed oral consent, anonymity, and confidentiality of the respondents. The data was collected with strict compliance with the ethical demands of respondents' data protection management as required in research studies.

# 2.2. Area of the study

The study was carried out in Umuahia the capital of Abia State and it is located in South East geo-political zone of Nigeria. Umuahia consists of Umuahia North and Umuahia South. Umuahia North Local Government Area is located within Latitude 5° 20' and 300 N, of the Equator and Longitude 7° 40', and 7° 50' E of the Greenwich meridian. Umuahia is located in the South – East geopolitical zone of Nigeria. Notable food service establishments operate in Umuahia such as De Choice, Crunchies, Apples, Jovit, Chicken Republic, Roots, Kilimanjaro, among others. However, the geographical scope of this study was limited to Umuahia metropolis as only food service establishments in operation within this area were used for the study.

## 2.3. Population and Sample

The population for this study included all dinners of food service establishments in Umuahia metropolis of Abia State who visited these establishments during the period of this study (October to December, 2021). The researchers purposively used 300 dinners drawn from different food service establishments in Umuahia as sample size. The breakdown of the establishments and the copies of the research instrument administered are presented as follows; Crunchies (50), De Choice (50), Roots (50), Kilimanjaro (50), Jovit (50), and Chicken Republic (50).

## 2.4. Instrument for Data Collection

The instrument for data collection was 23 items questionnaire which had two sections. Section A sought to collect bio-data of the respondents, while section B contained measurements of variables of the study. The independent variables – food quality and brand image – had 6 items each while perceived value had 5 items, the dependent variable (brand switching) had 6 items. On each of the items, the respondents were requested to indicate their opinion on a four-point scale of Strongly Agree (4 point), Agree (3 point), Disagreed (2 point), and Strongly Disagreed (1 point). The instrument was subjected to Cronbach Alpha reliability test and a reliability coefficient of 0.78 was obtained confirming the internal consistency of the instrument.

## 2.5. Data Collection Technique

The administration of the instrument was based on observed customer throughput, and accessibility sampling technique was used, thus only accessible dinners were used for the study. This was achieved through the help of three research assistants (RAs). These RAs were trained on how to collect the data. All the copies of the instrument administered were retrieved on the spot. However, only 281 copies of the instrument were found usable for the study representing 93.7% of the total number administered.



#### 2.6. Data Analysis Technique

Data collected for the study was analyzed using both descriptive and inferential statistical tools. The descriptive analysis featured as a way of describing the properties of the data to show the variations in responses and opinions using frequencies and percentage denotations as well as other descriptive items. The parametric inferential analysis was done with the use of regression analysis on  $\frac{1}{Page \mid 133}$ SPSS version 25 to determine the relationships between the independent variables (Food Quality, Perceived Value, and Brand Image) and the dependent variable (Brand Switching) as can be seen on the hypotheses formulated for the study.

#### 3. Results and Discussion

**Table 1.** Regression Estimate for Hypotheses Testing

Variables	Coefficients	t-statistic	Sig.
			-
Food Quality	-0.5429	-8.6941	0.0000
Perceived Value	-0.0098	-0.6352	0.5258
Brand Image	-0.0615	-3.3086	0.0011
(Constant)	32.2581	46.7249	0.0000
R Squared	0.9130		
Adjusted R-squared	0.9111		
F-Statistics	480.8915		
Sig.	0.000b		

3.1. Hypothesis 1: Food quality does not significantly influence brand switching among dinners of food service establishments in the study area.

The coefficient of food quality in Table 1 is -0.5429 and this revealed that a negative relationship exists between food quality and brand switching among dinners of food service establishments in the study area. This also implies that an increase in food quality will lead to about 0.5429 decrease in brand switching. Simply put, the better the food quality, the less the brand switching. The t-statistic value of -8.6941 with sig. value of 0.0000 indicates that the negative relationship between food quality and brand switching is statistically significant at 5%, since the sig. value is less than 0.05. Therefore, the study rejected the null hypothesis and accepted the alternative that food quality significantly influences brand switching among dinners of food service establishments in the study area. While this study is in line with the findings of Ananth et al., (2011), it is in opposite direction with the findings of Dube and Menon (2000). Food quality addresses the physiological needs of the dinners and as such remains one of the determining factors of where to dine. Therefore, if the perceived food quality in terms value/benefit does not congruent consumer expectation, the tendency to develop avoidance behavior arises. The Utility-Driven Perspective of brand switching which holds the view that consumers are increasingly likely to switch brand if they perceive that a new product or service would bring them greater utility (benefit, value) than the incumbent product/service supports this (Douglas & Connor, 2013; Kang & James, 2004).



3.2. Hypothesis 2: Perceived value has no significant influence on brand switching among dinners of food service establishments in the study area.

The coefficient of perceived value in Table 1 is -0.0098. This indicates that consumers' perceived value is negatively related to brand switching. This implies that an increase in perceived value will lead to 0.0098 decrease in brand switching among dinners of food service establishments in the study area. The t-statistics of -0.6352 with a significant value of 0.5258 showed that the negative relationship between perceived value and brand switching is not statistically significant at 5% level. Thus, the study accepted the null hypothesis that perceived value has no significant influence on brand switching among dinners of food service establishments in the study area. The findings of Appaih, et al. (2017; 2019) and Nagarajan and Jafersadhiq (2019) are in agreement with this study. Consumers as economic beings act as they perceive and will most likely switch brand if the perceived value/benefit of the new product/service is higher than the one presently used (Douglas & Connor, 2013)

3.3. Hypothesis 3: Brand image does not significantly influence brand switching among dinners of food service establishments in the study area.

Table 1 revealed that the coefficient of brand image is -0.0615 and this means that band image has negative relationship with brand switching among dinners in food service establishments in the study area. This implies that an increase in brand image will lead to about 0.0615 decrease in brand switching. The t-statistic of -3.3086 with sig. value of 0.011 indicates that the relationship between brand image and brand switching is statistically significant, since the sig value is greater than 0.05. Thus, the study rejected the null hypothesis and accepted the alternative that brand image significantly influences brand switching among dinners of food service establishments in the study This finding is in line with the findings of Appaih, et al., (2017; 2019), and Nagarajan and Jafersadhiq (2019). The image of a company has socio-psychological factors that motivate a consumer to switch brand (Appaih, et al 2019; Nikic 2012). The process-driven perspective of brand switching suggests that brand switching is a psychological process providing psychological benefits to the consumer perhaps for egocentric reasons. Consumers most times are not very concerned about the benefits of the switching decision but tend to demonstrate flexibility in the choices they make (Lei et al., 2017). Therefore, if the brand image as perceived by the consumer does not congruent the consumer's ideal self, the tendency to develop avoidance behavior (switching) arises (Appaih et al., 2017). The researchers suggest that further studies be carried out by future researchers in different locations using different methodologies to determine other determinants of brand switching in food service operations to help mitigate customer avoidance behavior

# 4. Conclusion

Based on the findings of the study, it is concluded that all the independent variables; food quality, perceived value, and brand image have negative relationships with the dependent variable - brand switching in the study area. In the light of the findings of the study, it is recommended that operators of food service establishments are to ensure that the quality of their menu offerings meets the physiological needs and expectations of the consumers capable of decreasing the switching behavior and avoidance tendencies. Operators of food service establishments are to ensure that there is continuous improvement in all facets of their operations to enhance the perceived value of their

Page | 134



menu offerings since consumers act as they perceive. Operators of food service establishments are to build an image that portrays their operations in good light and improves customer-brand relationship by fulfilling service promises among others.

# Acknowledgments

Page | 135

The authors acknowledge the research assistants and the data analyst for their efforts in carrying out this study. The authors whose works were reviewed in the course of this study and are also appreciated.

#### **Conflict of Interest**

The authors declare no conflict of interest.

# **Author Contributions**

IBA and MNE conceived the study, designed the study, collected the data and wrote the manuscript. The authors also approved the final draft of the manuscript.

## **Data availability Statement**

The original contributions presented in the study are included in the article. Further inquiries can be directed to the corresponding author.

#### References

- Ahmad, F., Ghazali, H, & Othman, M. (2013). Customer preference between fast food service restaurant and casual dining restaurant: a conceptual paper. 3rd International Conference on management (3rd ICM 2013) Proceeding Penang, Malaysia, June 10-11.
- Akbar, Y A. A. & Alaudeen, M. S. S. (2012). Determinant of factors that influence consumer in choosing normal full-service restaurant: Case in Seri Iskandar, Perak, Malaysia. *South East Asian Journal of Contemporary Business, Economics and Law, 1,* 137-145.
- Ananth, A., Ramesh, R., & Prabaharan, B. (2011). Service quality gap analysis in private sector banks—A customer's perspective. *Indian Journal of Commerce and Management Studies*, 2, 245-253.
- Appaih, D., Ozuem, W., & Howel, K.E. (2017). Brand switching in the smart phone industry. A preliminary study. *Global Business and Technology Association Conference, Vienna Austria*.
- Appiah, D., Ozuem, W., Howell, K. E., & Lancaster, G. (2019). Brand switching and consumer identification with brands in the smart phones industry. *Journal of Consumer Behaviour*, *18*, 463-473. DOI: 10.1002/cb.1785
- Baker, J., & Cameron, M. (1996). The effects of the service environment on affect and consumer perception of waiting time: An integrative review and research propositions. *Journal of the Academy of Marketing Science*, 24, 338-349. DOI: 10.1177/0092070396244005
- Brady, M. K., & Cronin Jr, J. J. (2001). Some new thoughts on conceptualizing perceived service quality: a hierarchical approach. *The Journal of Marketing*, 65, 34-49. DOI: 10.1509/jmkg.65.3.34.18334
- Choi, K.S, Cho, W.H, Lee, S.H, Lee, H.J, & Kim, C.K, (2004). The relationships among quality, value, satisfaction and behavioral intention in health care provider choice: A South Korean



- Study. Journal of Business Research, 57, 913-921. DOI: /10.1016/S0148-2963(02)00293-X
- Colgate, M., & Lang, B. (2001). Switching barriers in consumer markets: an investigation of the financial service industry. Journal of Consumer Marketing, 18, 332-347. 10.1108/07363760110393001
- De Ruyter, K. Wetzels, M., & Bloemer, J. (1998). On the relationship between perceived service Page | 136 quality, service loyalty and switching costs. International Journal of Service Industry Management, 9, 436-453. DOI: 10.1108/09564239810238848

- Douglas, L. & Connor, R. (2003). Attitudes to service quality- the expectation gap. Nutrition and Food Science, 33, 165-172. DOI: 10.1108/00346650310488516
- Dube, L. & Menon, K. (2000). Multiple roles of consumption emotions in post-purchase satisfaction with extended service transactions. International Journal of Service Industry Management, 11, 287-304. DOI: 10.1108/09564230010340788
- Gartner, M. (2016). Worldwide smart phone grew 9.7 percent in fourth quarter of 2015. Retrieved from:http://www.gartner.com/newsroom (accessed October, 11 2021).
- Gwinner, K. P., Gremler, D. D., & Bitner, M. J. (1998). Relational benefits in service industries: the customer's perspective. Journal of the Academy of Marketing Science, 26, 101–114. DOI: 10.1177/0092070398262002
- Kang, G. D., & James, J. (2004). Service quality dimensions: an examination of Gro roos's service quality model. Managing Service Quality, 14, 266-277. DOI: 10.1108/09604520410546806
- Kim, S., & Jin, B. (2002). Validating the retail service quality scale for US and Korean customers of discount stores: An exploratory study. Journal of Services Marketing, 16, 223-237. DOI: 10.1108/08876040210427218
- Lei, O., Jiang, Y., & Wang, C. L. (2012). The impact of affect on service quality and satisfaction: the moderation of service contexts. Journal of Services Marketing, 20, 211-216. DOI: 10.1108/08876040610674562
- Nagajaran, S., & Jafersadhiq, A. (2019). A research on brand switching factors of millennial customers on toiletries. International Journal of Innovative Technology and Exploring Engineering, 8, 2278-3075. DOI: 10.35940/ijitee.L1122.10812S19
- Nezakati H., Kuan, Y. L., & Asgari, O. (2011). Factors influencing customer loyalty towards fast food restaurants. International Conference on Society and Economics Development, IPEDR, Singapore.
- Nikic, M. (2012). When do customers switch brands? The impact of Demographics and Lifestyles on benefits sought and Brand switching. (Master's Thesis, University of Vienna, Austria).
- Nordman, C. (2004)). Understanding customer loyalty and disloyalty the effect of loyalty supporting and repressing factors. (Doctoral Dissertation, Swedish School of Economics and Business Administration, Helsingfors). https://helda.helsinki.fi/handle/10227/97
- Sefian, M. N. I. M., Jaini, A., Sharudin, N. N., & Abdullah, M. H. (2013). Determining Factors that Influence Customers Repatronage Intention: The Case Study of Radix Fried Chicken (RFC), the Local Home-grown Fast Food Chain Restaurant in Malaysia. The 2nd IBSM, International Conference on Business and Management, Chiang Mai – Bangkok, October 2-4.
- Tabassum, A., & Rahman, T. (2012). Differences in consumer attitude towards selective fast food restaurants in Bangladesh: an implication of multi-attribute attitude model. World Review of



Business Research, 2, 12-27.

Woodruff, R. B. (1997). Customer value: the next source for competitive advantage. Journal of the Academy of Marketing Science, 25, 139-153. DOI: 10.1007/bf02894350

Yu, C.M., Wu, L.Y., Chiao, Y.C., & Tai H.S. (2005). Perceived quality, customer satisfaction, and customer loyalty: the case of Lexus in Taiwan. *Total Quality Management*, 16, 707-719. DOI: Page | 137 10.1080/14783360500077393

Publisher: Department of Home Economics and Hospitality Management Education, University of Nigeria, Nsukka 41001, Nigeria

© 2022 the Author(s), licensee Department of Home Economics and Hospitality Management Education, University of Nigeria, Nsukka, Nigeria. This is an open access article distributed under the the Creative Commons Attribution (http://creativecommons.org/licenses/by/4.0)