Brand Preference Towards Footwears

J. Vimal Priyan PhD
Head, Department of Commerce
Sri Vidhya College of Arts & Science
Virudhunagar
Tamilnadu
India
Email: vimalugc@yahoo.co.in

Received: November 14, 2018  Accepted: November 29, 2018  Online Published: December 6, 2018

Abstract
The Indian Footwear sector is a promising one with tremendous opportunity for growth both in the international and domestic market. With low production cost, abundant supply of raw material, evolving retail system, buying patterns and huge consumption market, this sector is posed to grow to great heights. But this market is highly fragmented. The Unorganized sector dominates the industry posing a threat to the organized players. The Indian consumers have become more discerning these days. The double income stance, increased disposable income among the urban middle class, brand and fashion consciousness due to globalization has all led to changing lifestyle of the Indian consumers. The objective of the present study is to ascertain the level of brand preference towards the footwear. It is found that there is no significant association between socio economic variables except age and their level of brand preference towards footwears.

Keywords: Domestic Market, Indian Culture, Footwear, Traditional Craft

1. Introduction
Over centuries many varieties of footwear were made in the Himalayan region in order to protect the feet from cold weather. Footwear was made of leather, wool or remains of the plants. Since most part of India is warm, footwear was not a necessity and therefore Indians were barefooted for many years. Innumerable references to foot worship in Indian culture convey the impression that the foot is regarded as an important part of the human body. Touching the feet of elders was considered as the height of good manners. It was considered as a civilized behavior. Until half a century ago, India was described as a barefoot country. They were characterized by such toughness of foot that they can travel for long distances without any discomfort. It seems likely that the cultural adjustments lead to the adoption of footwear. Furthermore, the ascetic Hindu, Buddhist and Jain sects were not generally permitted the worldly luxury of footwear. Therefore footwear was considered as a luxury until half a century ago. But even then India was known for its traditional craft of footwear making.

The Indian Footwear sector is a promising one with tremendous opportunity for growth both in the international and domestic market. With low production cost, abundant supply of raw material, evolving retail system, buying patterns and huge consumption market, this sector is posed to grow to great heights. But this market is highly fragmented. The Unorganized sector dominates the industry posing a threat to the organized players. The Indian consumers have become more discerning these days. The double income stance, increased disposable income among the urban middle class, brand and fashion consciousness due to globalization has all led to changing lifestyle of the Indian consumers.

2. Statement of the Problem
In the organized sector, men’s footwear accounts for almost half of the total market. Therefore it is clear that only 50% - 55% of the sales take place in the organized sector even in the men’s sector. The anomaly is even very high in the women’s sector wherein 80-90 per cent of the purchases take place in the unorganized sector. There is no organized retailing that has a national presence in this sector. The profile of the Indian consumer has changed. Though footwear is considered as lifestyle enhancement product, the manufacturers and retailers have failed to
understand this. Still the traditional segmentation patterns are followed in this industry, which include materials used for construction of the footwear, usage patterns and demographics. Also there are innumerable literatures that focus on trade policies followed in the Footwear market in international countries, treatment of workers in the footwear industry, Therapeutic use of footwear, supply chain patterns etc but there are hardly any study that Explores the consumer behavior of Indians and their association towards the footwear Preferences. Behavioral segmentation though has been used in many other products like Apparels, insurance, real estate etc., But not in the footwear sector. The present study is an Attempt to fill the gap. This sector is a highly promising one with less knowledge about its customers. The traditional way of wearing footwear is slowly giving a way to the modern usage of footwear. This is true especially in the case of urban dwellers. Footwear occupies an important position in the market, since it becomes a necessity for the day-to-day life of common people. It gives safety to their feet and protects them from heat and cold and it prevents certain diseases also. In modern days, manufacture of different brands of footwear come out with varying features related to their products. Consumers are not in a position to identify a good brand of footwear. The users of the chapels do not know the product features and other. Certain consumers are ready to accept any brand while certain others insisting on a particular brand of chapel. These kinds of consumers with brand loyalty are ready to wait for their brand, if it is not available in the market. New footwear brands are also coming to the market almost every day. With the increase in the number of brands, buyers are not in a position to differentiate one brand from another. Moreover, the footwear manufacturers adopt different sales promotion strategies, to attract customers. Keen competition in the footwear industry had made the manufacturers and dealers to adopt unfair trade practices also. Customers are confused with regard to the brand as well as to the quality of the product. In this context, it is very difficult to identify the motivating factors behind the purchase decision of every consumer for buying footwear. Hence, there is an imperative need to undertake a study.

3. Objectives of the study
The following are the objectives of the study.
- To ascertain the level of brand preference towards the footwear.
- To offer suitable suggestions on the basis of the findings of the study.

4. Hypotheses of Study
The following hypotheses have been framed for the study.
- There is no significant relationship between age of the respondents and their level of brand preference towards footwear.
- There is no significant relationship between gender of the respondents and their level of brand preference towards footwear.
- There is no significant relationship between Education of the respondents and their level of brand preference towards footwear.
- There is no significant relationship between Occupation of the respondents and their level of brand preference towards footwear.
- There is no significant relationship between Monthly income of the respondents and their level of brand preference towards footwear.

5. Area of the Study
A study of this nature required the selection of a suitable place. Sivakasi was selected for the study, since the researcher belongs to this area. Sivakasi Town is located at Virudhunagar District. In the commercial world, sivakasi is popularly called “MINI JAPAN”. It is famous for matches, fireworks and printing.

6. Methodology

6.1 Primary Source
The primary data have been collected through questionnaire. The questionnaire has been designed to gather the data keeping in view of above objectives. The questionnaire was pre-tested before its administration on the respondents.

6.2 Secondary Sources
Secondary data were gathered from standard textbooks, journals, magazines and encyclopedia.

6.3 Sample Design
The population for the study consists of all those who pay a visit to the footwear retail units. A sample size of 80 was fixed for the present study. Since, the footwear users are infinite in number and there is a time constraint for the researcher, convenient sampling has been adopted.
6.4 Period of the study
The present study covers the period of six months from October 2017 to April 2018. A pilot survey was conducted in October 2017 to test the validity of the questionnaire. In order to ascertain the latest brand prevailing in the consumer’s footwear market, the current year alone has been taken for the study.

6.5 Profile of the Respondents
The socio-economic profile of the respondents is shown in the following table.

| Profile variables | Particulars | Number of Respondents | Percentage |
|-------------------|------------|------------------------|------------|
| Age               | Below 20   | 14                     | 17.5       |
|                   | 21 to 30   | 45                     | 56.2       |
|                   | 31 to 40   | 14                     | 17.5       |
|                   | 41 to 50   | 4                      | 5.0        |
|                   | Above 50   | 3                      | 3.8        |
| Gender            | Male       | 29                     | 36.2       |
|                   | Female     | 51                     | 63.8       |
| Number of Members in the family | Below 3 | 5 | 6.2 |
|                   | 3-5        | 61                     | 76.2       |
|                   | 6-8        | 11                     | 13.8       |
|                   | Above 8    | 3                      | 3.8        |
| Educational Qualification | School Level | 13 | 16.2 |
|                   | UG         | 28                     | 35.0       |
|                   | PG         | 34                     | 42.5       |
|                   | Diploma    | 5                      | 6.5        |
| Occupation        | Business   | 8                      | 10.0       |
|                   | Self- Employed | 33 | 41.2 |
|                   | Executive  | 12                     | 15.0       |
|                   | Government Employee | 5 | 6.2 |
|                   | House Wife | 9                      | 11.2       |
|                   | Others     | 13                     | 16.2       |
| Monthly family income | Up to Rs.5000 | 8 | 10.0 |
|                   | Rs.5001 to 10000 | 20 | 25.0 |
|                   | Rs.10001 to 15000 | 20 | 25.0 |
|                   | Rs.15001 to 20000 | 32 | 40.0 |

Source: Primary data

7. Most Preferred Brand
The consumer’s brand preference differs from one person to another. The brand preference of respondents have been analyzed and the facts are presented in Table 1.

Table 1 Most Preferred Brand

| S. No | Brand       | No. of respondents | Percentage |
|-------|-------------|--------------------|------------|
| 1     | BATA        | 16                 | 20.0       |
| 2     | WOOD LAND   | 7                  | 8.8        |
| 3     | MESCOS      | 5                  | 6.2        |
| 4     | REEBOK      | 1                  | 1.2        |
| 5     | NIKE        | 7                  | 8.8        |
| 6     | LIBERTY     | 2                  | 2.5        |
| 7     | ACTION      | 4                  | 5.0        |
| 8     | PHOENIX     | 3                  | 3.8        |
| 9     | ADIDAS      | 3                  | 3.8        |
| 10    | VKC         | 32                 | 40.0       |
| Total |             | 80                 | 100.0      |

Source: Primary data
The above table 1 conveys the fact that among the sample respondents 32 (40.0 per cent) of the respondents have preferred VKC; 16 (20.0 per cent) of the respondents have preferred BATA; 7 (8.8 per cent) of the respondents have preferred NIKE and WOODLAND. 5 (6.2 per cent) of the respondents have preferred MESCOS; 4 (5.0 per cent) of the respondents have preferred ACTION; 3 (3.8 per cent) of the respondents have preferred PHOENIX and ADIDAS; 2 (2.5 per cent) of the respondents have preferred LIBERTY and the remaining 1(1.2 per cent) of the respondents have preferred REEBOK.

It is shown that 40.0 per cent of the respondents use VKC footwear.

7.1 Identification of Level of Brand Preference of Footwear

The researcher has identified 11 statements related with level of brand preference of footwear based on the previous studies and own observations of the researcher. The researcher has gathered the respondents’ opinion based on the liker five point scaling techniques. The researcher has assigned some score that are 5 for “Strongly agree”, 4 for “Agree”, 3 for “No”, 2 for “Highly disagree” and 1 for “Highly Disagree”. The score value for every sample respondents is obtained. The level of low level, medium level and high level for analytical purpose. While the score value of the respondent >(X+SD) and the score value of the respondent < (X-SD) have been classified as the satisfaction level is high and the satisfaction level is low respectively and the score values between (X +SD) and (X-SD) have been classified as medium level of satisfaction, X and SD are the arithmetic mean and standard deviation which are calculated from the score values of 80 respondents. The arithmetic mean and standard deviation are 28.6 and 3.53 respectively.

\[
(X+SD) = 32.13: high
\]
\[
(X-SD) = 25.07: low
\]
\[
(X+ SD) +(X- SD) =25.07 to 32.13: medium
\]

7.1.1 Chi- square test

Chi-square tests one of the simplest and mostly widely used non-parametric tests in statistical work. The $x^2$ symbol is Greek letter chi. The $x^2$ was first used by Karl Pearson in the year 1900. The quantity $x^2$ describes the magnitude of the discrepancy between theory and observation. The test statistics of $x^2$ has been computed as follows

\[
\text{Chi-square test} = \sum \frac{(O-E)^2}{E}
\]

Where

\[
O = \text{Observed Frequency}
\]
\[
E = \text{Expected Frequency}
\]
\[
Df = (r-1)(c-1)
\]
\[
R = \text{Row}
\]
\[
C = \text{Column}
\]

7.2 Age and Level of Brand Preference towards Footwear

Age plays an important role in brand preference of footwear. Hence it is necessary to study the age as an important socio economic variable that influences their level of brand preference towards of footwear.

The age of the respondents and level of brand preference of footwear are shown in the table 2.

Table 2 Age and Level Of Brand Preference of Footwear

| S. No | Age       | Level of brand preference | Total |
|-------|-----------|---------------------------|-------|
|       | Below years | High | Medium | Low |   |
| 1     | 20        | 5    | 7      | 2   | 14 |
|       | (35.7%)   | (13.5%) | (14.3%) | (17.5%) |
Source: Computed Data

From the table 2 it has been observed that out of 14 respondents with high level of brand preference of footwear, 5 (35.7%) is coming under the age group of below 20 years and 6 (42.9%) of them are in the age group between 20 to 30 years and 2 (14.3%) of them are in the age group between 30 to 40 years. 1(7.1%) is coming under the age group between 40 to 50 years. Out of 52 respondents with medium level of brand preference of footwear; 7 (13.5%) of are in the age group below 20 years, 33(63.5%) of them in the age group between 20 to 30 years , 9 (17.3%) of them are in the age group between 30 to 40 years 3(5.8%) of them are in the age group between 40 to 50 years. Finally out of respondents have low level of brand preference of footwear; 2(14.3%) of them are in the age group below 20 years, 6(42.9%) of them are in the age group between 20 to30 years, 3(21.4%) of them are in the age group of above 50 years.

In order to test the relationship between age and level of satisfaction of footwear, the following null hypothesis is formulated.

Ho1. “There is no significant relationship between age and level of brand preference of footwear.”

The Chi-square test is applied by using SPSS to examine the null hypothesis and the computed result is given below.

Table 3 Age and Level of Brand Preference Towards Footwear

| Value               | Df  | Asymp. Sig. (2-sided) | Sig. |
|---------------------|-----|-----------------------|------|
| Pearson Chi-Square  | 19.835a | 8                      | 0.011|
| Likelihood Ratio    | 16.318 | 8                      | 0.038|
| Linear-by-Linear Association | 5.066 | 1                      | 0.024|
| N of Valid Cases    | 80  |                       |      |

Source: Computed Data

With regard to age and the level of brand preference footwear, the P value of Chi-square statistics is 0.011 which is less than 0.05. Therefore the null hypothesis framed is rejected. Hence it is concluded that there is significant relationship between age and level of brand preference of footwear.

7.2 Educational Qualification and Level of Brand Preference Towards Footwear

Education plays an important role in brand preference of footwear. Hence it is necessary to study the education as an important scio economic variable that influences their level of brand preference towards of footwear.
Table 4 Educational Status and Level of Their Brand Preference towards Foodwear - Cross Table

| S. No | Educational status | Level of Satisfaction | Total |
|-------|--------------------|-----------------------|-------|
|       |                    | High                  | Medium | Low   |
| 1     | School level       | 2                     | 10     | 1     | 13 (16.2%) |
|       |                    | (14.3%)               | (19.2%) | (7.1%) |
| 2     | Under Graduate level | 6                   | 16     | 6     | 28 (35.0%) |
|       |                    | (42.9%)               | (30.8%) | (42.9%) |
| 3     | Post graduate level | 6                   | 21     | 7     | 34 (42.5%) |
|       |                    | (42.9%)               | (40.4%) | (50.0%) |
| 4     | Diploma level      | 0                    | 5      | 0     | 5 (0.62%) |
|       |                    | (0.0%)                | (9.6%)  | (0.0%) |
| Total |                    | 14                   | 52     | 14    | 80 (100%) |

Source: Computed Data

From table 4 it has been observed that out of 10 respondents with high level of brand preference of footwear (14.3%) of them school level, 6 (42.9%) of them had completed under graduate level, 6 (42.9%) of them post graduate level, 0 (0.0%) of them diploma level. 52 respondents with medium level of satisfaction of brand preference of footwear, 10 respondent of them completed up to school level, 16 respondent of them are under graduates, 21 respondent of them post graduate level, 7 respondent of them diploma level. Finally out of 14 respondents have low level of brand preference of footwear 1 respondent of them completed up to school level, 6 respondent of them are under graduates, 7 respondents of them are diploma holders.

In order to test the relationship between educational status and level of brand preference of footwear, the following null hypothesis is formulated.

"There is no significant relationship between educational status and level of brand preference of footwear."

Table 5 Educational Status and Level of Brand Preference towards Footwear

|                          | Value | Df  | Asymp. (2-sided) | Sig. |
|--------------------------|-------|-----|------------------|------|
| Pearson Chi-Square       | 4.725 | 6   | 0.580            |      |
| Likelihood Ratio         | 6.486 | 6   | 0.371            |      |
| Linear-by-Linear Association | 0.25 | 1   | 0.651            |      |
| N of Valid Cases         | 80    |     |                  |      |

Source: computed data

With regard to educational status and the level of brand preference of footwear, the P value Chi-square statistics is 0.580 which is more than 0.05. Therefore, the null hypothesis framed is accepted. Hence, it is concluded that there is no significant relationship between educational status and level of brand preference of footwear.

The researcher has examined the occupation of the respondents and their level of brand preference of footwear. The result is presented in the table.
7.3 Occupation and Level of Brand Preference towards Footwear

Occupation plays an important role in the brand preference of footwear. Hence it is necessary to study the occupation as an important socio economic variable that influences their level of brand preference towards of footwear.

Table 6 Occupation and Level of Brand Preference towards Footwear

| S.NO | Occupation       | Level Of Satisfaction | Total |
|------|------------------|-----------------------|-------|
|      |                  | High                  | Medium | Low   |       |
| 1    | Business         | 5 (35.7%)             | 1 (1.9%) | 2 (14.3%) | 8 (10.0%) |
| 2    | Self- employed   | 3 (21.4%)             | 24 (46.2%) | 6 (42.9%) | 33 (41.2%) |
| 3    | Professional     | 1 (7.1%)              | 7 (13.5%) | 4 (28.6%) | 12 (15.0%) |
| 4    | Executive        | 2 (14.3%)             | 3 (5.8%) | 0 (0.0%) | 5 (6.2%) |
| 5    | Government employee | 2 (14.3%)       | 6 (11.5%) | 1 (7.1%) | 9 (11.2%) |
| 6    | House Wife       | 1 (7.1%)              | 11 (21.2%) | 1 (7.1%) | 13 (16.2%) |
| Total|                  | 14 (100%)             | 52 (100.0%) | 14 (100.0%) | 80 (100.0%) |

Source: Primary data

From the table 6 it has been observed that out of 10 respondents with high level of brand preference towards footwear, 5 (35.7%) respondent of them were business. 3 (21.4%) respondent of them self employee, 4 (28.6%) respondent of them were professional, 1(7.1%) respondent of them were Government employee, and 1 (7.1%)respondent of them were House wife.

In order to test the relationship between occupation of the respondents and their level of brand preference of footwear, the null hypothesis is formulated that is no significant relationship between occupation and their level of brand preference towards footwear.

Table 7 Occupation and Level of Brand Preference towards Footwear

|                         | Value  | Df  | Asymp. Sig. (2-sided) |
|-------------------------|--------|-----|-----------------------|
| Pearson Chi-Square      | 21.797 | 10  | 0.16                  |
| Likelihood Ratio        | 20.627 | 10  | 0.24                  |
| Linear-by-Linear        | 0.013  | 1   | 0.910                 |
| Association             |        |     |                       |
| N of Valid Cases        | 80     |     |                       |

Source: computed data
With regard to occupation and the level of brand preference of footwear, the P value of chi-square (0.16) is more than 0.05. Therefore, the null hypothesis is accepted. Hence, it is concluded that the there is no significant relationship between occupation and their level of brand preference of footwear.

### 7.4 Income and Level of Brand Preference towards Footwear

Income is also one of dominant factor in making brand preference of footwear. This survey clearly shows the income group of respondents. Hence it is necessary to study the monthly income as important socio economic variables that influence their level of brand preference of footwear.

The monthly income of the respondents and their level of brand preference of footwear are shown in the table.

| S. No | Income       | Level of Brand Preference | Total |
|-------|--------------|---------------------------|-------|
|       |              | High (7.1%) | Medium (13.5%) | Low (0.0%) |       |
| 1     | Below Rs.5000| 1     | 7       | 0       | 8 (10.0%) |
| 2     | Rs.5,001 to  
    Rs.10000 | 5     | 11      | 4       | 20 (25.0%) |
| 3     | Rs.10,001 to  
    Rs.15000 | 3     | 13      | 4       | 20 (25.0%) |
| 4     | Rs.15001 to 20000 | 5     | 21      | 6       | 32 (40.0%) |
|       | Total        | 14    | 52      | 14      | 80 (100.0%) |

Source: computed data

From the table 8 it has been observed that out of 14 with high level of brand preference of footwear, 1 (7.1%) of them earned below Rs 5000. 5(35.7%) of them earned Rs 5,001 to 10,000. 3 (21.4%) of them earned Rs 10,001 to 15,000. 5 (35.7%) of them earned above Rs 15001 to20,000. Out of 52 respondents with medium level of brand preference of footwear 7 (13.5%) of them earned below Rs 5,000.11(21.2%) of them earned Rs 5,001 to 10,000. 13(25.0%) of them earned Rs 5,000 to 10,000. 21(40.4%) of them earned above Rs 15001 to20,000. Finally out of 14 respondents have low level of satisfaction of footwear, 0(0.0%) respondent of them below Rs 5,000,4(28.6%) of them earned Rs 5,001 to 10,000 . 4 (28.6%) of them earned Rs 10,001 to 15,000. 2 (42.9%) of them earned above Rs 15001 to 20000.

In order to test the relationship between monthly income and their level of brand preference of footwear , the following null hypothesis is formulated.

“There is no significant relationship between monthly income and the level of brand preference of footwear”

The Chi-square test is applied by using SPSS to examine the null hypothesis and the computed result is given below

| Value        | df | Asymp. (2-sided) | Sig. |
|--------------|----|------------------|------|
| Pearson Chi-Square | 3.397a | 6 | 0.758 |
| Likelihood Ratio     | 4.688 | 6 | 0.584 |
| Linear-by-Linear Association | 0.539 | 1 | 0.463 |

Source: computed data
With regard to Monthly income and the level of brand preference of footwear, the P value of chi-square (0.758) is more than 0.05. Therefore, the null hypothesis is accepted. Hence, it is concluded that there is no significant relationship between family income and their level of brand preference of footwear.

7.5 Gender and Level of Brand Preference towards Footwear

Gender is also one of the dominant factors making brand preference of footwear. Hence it is necessary to study the gender as an important socio economic variable that influences their level of brand preference of footwear. The gender of the respondents and level of brand preference of footwear are shown in the table.

Table 10 Gender and Level of Brand Preference of Footwear

| S. No | Gender | Level Of Satisfaction | Total |
|-------|--------|-----------------------|-------|
|       |        | High      | Medium   | Low    |       |
| 1     | Male   | 8 (57.1%) | 16 (30.8%) | 5 (35.7%) | 29 (36.2%) |
| 2     | Female | 6 (42.9%) | 36 (69.2%) | 9 (64.3%) | 51 (63.8%) |
| Total |        | 14 (100.0%) | 52 (100.0%) | 14 (100.0%) | 80 (100.0%) |

Source: Computed data

From the Table 3.5 it has been observed that out of 14 respondents with high level of satisfaction of brand preference of footwear, 8 respondents of them are male. 6 respondent of them are female. Out of 52 respondents with medium level of brand preference of footwear 16 respondent of them are Male.36 respondents are Female. Finally out of 14 respondents have low level of brand preference of footwear, 5 respondent of them male 9 respondents of them Female.

In order to test the relationship between gender and their level of brand preference towards footwear, the following null hypothesis is formulated.

“*There is no significant relationship between monthly income and the level of brand preference of footwear*”

The Chi-square test is applied by using SPSS to examine the null hypothesis and the computed result is given below

Table 11 Gender and Level of Brand Preference Towards Footwear

|               | Value  | df | Asymp. Sig. (2-sided) |
|---------------|--------|----|-----------------------|
| Pearson Chi-Square | 3.322* | 2  | 0.190 |
| Likelihood Ratio    | 3.211  | 2  | 0.201 |
| Linear-by-Linear Association | 1.374 | 1  | 0.241 |
| N of Valid Cases   | 80     |    |                       |

Source: computed data

With regard to gender and the level of brand preference of footwear, the P value of chi-square (0.190) is more than 0.05. Therefore, the null hypothesis is accepted. Hence, it is concluded that there is no significant relationship between gender and their level of brand preference of footwear.

8. Suggestions

The following suggestions were given based on the findings of the study.
It is suggested that the manufactures may concentrate their efforts on the upper middle class and high income group in order to push-up their sales by keeping costly varieties instead of paying more attention to common varieties.

Manufactures of branded items may pay more attention to the quality of their products rather than price.

Footwear manufactures may take additional effort to popularize their products in the study area by window products.

It is suggested to the manufactures shall open various show rooms at various places so that may attract more customers.

In order to create mode demand for footwear products. Manufactures may spend more on television advertisements.

9. Conclusion

If the above suggestions are carried out, the sales of the footwear would go up in the market, benefiting both the manufactures and the dealers. At the same time the customers will also be satisfied with the product offered for sale. In the long run, the market for the footwear industry will pick up not only in Sivakasi but also in the whole India.

References

Biplab S. Bose- *Hand book of marketing management*, Himalaya publishing house, New Delhi.

Suja R. Nair- *Consumer behavior in Indian perspective*, Himalaya publishing house, New Delhi.

Sinha J.C.- *Principles of marketing and salesmanship*, R. Chand & Co publishers, New Delhi.

Rajan Nair. N- *Marketing*, Saltan chand & sons, New Delhi.

Bata Limited, Toronto, Canada. Published in 1994, printed in Italy by Sfera Sri.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/)