Importance-Performance Analysis of the Herbal Latte Beverage among Generation Z

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Abstract: *The purpose of this study was to determine generation Z's preferences and satisfaction with herbal latte mix beverages, as well as to make recommendations for features that should be maintained and improved. The Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI) methods were used to analyze the data. The findings revealed that generation Z prefers herbal latte mix s based on important factors such as price, taste, and benefit. A CSI of 70% suggests that generation Z's satisfaction with herbal latte mixed drink items belongs to the "satisfied" category. Price and flavor are the two most important constant qualities. Aroma and packaging were the second most important attributes to improve. The second priority attribute to improve was aroma and packaging. The attributes that were maintained included benefits, colors, and practicality.*

Keywords: Customer satisfaction index, Generation Z, Importance performance analysis, Mix herbal latte, Preference

1. Introduction

Indonesian have used herbal plants for generations, including as a spice in the cooking and health sector [1]. The use of herbal plants, one of which is processed as food and beverage that are efficacious for health, including ginger, *Curcuma xanthorrhiza*, and turmeric [2]. The main chemical compound on ginger rhizomes is gingerol which is helpful as an anti-inflammatory and antioxidant [3]. Ginger rhizome is commonly used to cure illnesses and conditions such as inflammatory and respiratory disorders, which are common in smokers [4]. *Curcuma xanthorrhiza* or temulawak (in Indonesia) contains curcumin and essential oils that are beneficial as antibacterial, antiviral, antioxidant, anti-inflammatory, and hepatoprotective [5], while turmeric is reported to have a role as an immune-booster and therapeutic agent against COVID-19 [6].

Herbal beverages, consumed as part of a balanced diet, may improve the antioxidant status and enhance the overall health status. Herbal teas/ beverages are rich sources of natural bioactive compounds such as carotenoids, phenolic acids, flavonoids, coumarins, alkaloids, polyacetylenes, saponins, and terpenoids, among others [7]. Mixed herbal drink products are beverages made from temulawak, turmeric, and ginger, packaged in the form of a tea bag. Currently, the market segment of mixed herbal products is only about ladies and gentlemen. Therefore, company X plans to expand a new market segment, Generation Z. Consumers with an age range of 17-30 years prefer espresso-based lattes [8]. Before, the use of lattes was identical to coffee which was later in other beverages such as tea. However, at this time, lattes began to penetrate herbal beverages. Some modern cafes have innovated herbal drink products such as ginger latte beverages and turmeric lattes [9]. Based on the popularity of lattes in generation Z, the owner of company X added lattes in the development of herbal mix beverages.

The variety of products such as herbal latte mix beverages on the market impacts the formation of generation Z preferences in product purchases. These preferences can be known through product attributes consumers consider in purchasing [10]. Therefore as a manufacturer, company X needs to know the attributes that generation Z prefers towards herbal latte mixed drink products. This knowledge allows the herbal latte mix product to be accepted and compete in the market. Furthermore, analysis of consumer satisfaction. Thus, this study aimed to study generation Z's preferences and satisfaction with herbal latte mix beverages and find out the recommendations for improved and maintained attributes of the products.

2. Literature Survey

Latte Herbal Beverage

The herbal beverage is a processed beverage made from herbal plants both from the stems, leaves, tubers, roots, and fruits that have benefits for the health of the body [7]. The raw materials for herbal beverages used in Indonesia include ginger, turmeric, and temulawak.

Ginger (*Zingiber officinale* Roscoe) has compounds shogaols, zingerone, and gingerols [11]. The compounds exhibit pharmacological activities such as anti-inflammatory, antioxidant, antiemetic, antiulcer, anti-cancer, anti-platelet, anti-diabetic, and lipid-lowering activities [11]. The use of ginger as a process includes ginger coffee, ginger tea, ginger drink, bandrek, and so on [12]. Turmeric (*Curcuma longa* L.) contains secondary metabolites of curcuminoids and essential oils [13]. Secondary metabolites in turmeric are efficacious as anti-inflammatory, antioxidant, antiviral, antibacterial, antifungal, antimalarial, and anticarcinogen [14]. The use of turmeric includes ginger turmeric drink, turmeric milk, honey turmeric, lemon turmeric, and turmeric-infused water [15]. Temulawak (*Curcuma xanthorrizha*) contains starch, essential oils, xanthorrhizol, curcumin, and flavonoids [16]. A herbal latte drink is a herbal drink to which a latte is added. The latte used to develop herbal mix beverages is a plant-based

creamer. Nondairy creamer is a milk substitution product made from vegetable oils and other food additives [17].

Consumer preferences

Consumer preferences are the fusion of products that consumers prefer [18]. Consumer preference is also important in developing a product goods, and services [19]. Generation Z is a generation born in 1995 - 2010, so at this time, it is 12 - 27 years old [20].

Product Attributes

Product attributes are components considered important considerations by consumers in purchasing [21]. Attributes considered important by consumers in choosing beverage based on ginger extract successively, namely price, taste, packaging, product information, expiration, brand, promotion, and ease of obtaining it [22].

Importance Performance Analysis (IPA)

Importance Performance Analysis (IPA) helps identify the attributes considered important and their performance [23]. Such results can be depicted on a cartesian diagram with four quadrants [24].

Quadrant A (Concentrate Here) describes that consumers assess important attributes while the performance provided by the company has not been good. In this situation, focusing on improving attribute performance is something that companies can do.

Quadrant B (Keep Up The Good) describes how consumers assess important attributes, and the company's performance has also been good. In this condition, maintaining attribute performance is something that the company can do.

Quadrant C (Low Priority) describes that consumers rate attributes as unimportant while those attributes also have low performance. In this condition, the company puts the performance of the attribute at a low priority.

Quadrant D (Possible Overkill) illustrates that consumers judge it as unimportant, but on the other hand its performance has been good. In this condition, the quadrant is referred to as the excess area.

Customer Satisfaction Index (CSI)

The Customer Satisfaction Index (CSI) is a value that indicates the level of customer satisfaction with the overall attributes of the product [25]. Therefore, the high product index will align with the level of consumer satisfaction with the product [26].

3. Methodology

The incidental sampling method determined the research sample based on the element of accidentally meeting and is considered to meet the criteria as a data source [27]. The criteria for respondents who are used as data sources were generation Z, who are currently aged 12-27 years or

generations born in 1995 - 2010 [20]. The research method was carried out in a quantitative descriptive manner. Data on the level of importance and performance level of attributes obtained through the Importance Performance Analysis (IPA) method and satisfaction data obtained from the Consumers Satisfaction Index (CSI) method will be described to describe the preferences of generation Z. Data were collected through interviews and questionnaires. The measurement scale that became the reference in the study was the Likert scale according to Table 1 [24].

Table 1: Likert scale

Score	Importance level	Performance Level
1	Very unimportant	Very bad
2	Unimportant	Bad
3	Quite important	Quite good
4	Important	Good
5	Very important	Very good

The stages of the IPA and CSI methods [28] are as follows:

1) Determining the degree of conformity

$$TKi = \frac{Xi}{Yi} . 100\%$$

Information:
Tki = Degree of conformity
Xi = Attribute performance appraisal score
Yi = Attribute importance level assessment score

2) Calculates average performance and average importance levels on each attribute

$$\overline{X}t = \frac{\sum Xi}{n} \quad \overline{Y}t = \frac{\sum Yi}{n}$$

Keterangan:
$\overline{X}t$ = Attribute performance level average score
$\overline{Y}t$ = Attribute average importance score
n = Number of respondents

3) Calculates the average of all attributes of performance levels and importance levels for the limits on a cartesian chart with the formula:

$$\overline{\overline{X}} = \frac{\overline{\sum Xi}}{K} \quad \overline{\overline{Y}} = \frac{\overline{\sum Yi}}{K}$$

Information:
$\overline{\overline{X}}$ = Average product performance level score across attribute factors
$\overline{\overline{Y}}$ = Average importance score of all attribute factors affecting the quality dimensions of the product
K = Number of attributes that may affect product quality

4) Mapping data in a cartesian diagram divided into four parts bounded by two lines intersecting perpendicular to the point $(\overline{\overline{X}}, \overline{\overline{Y}})$

The stages in CSI calculation are as follows:
1) Determining the Mean Importance Score (MIS) and Mean Satisfaction Score (MSS), these values are derived from the average importance and performance scores of each attribute, with the formula:

$$MIS = \frac{\overline{\sum Yi}}{n} \quad MSS = \frac{\overline{\sum Xi}}{n}$$

Information:
Yi = Importance value of i-th attribute

Xi = i-th attribute performance value

2) Calculating the Weight Factor (WF), this value is obtained through the average value of the importance level of each attribute or the Mean Importance Score (MISi) divided by the total Mean Importance Score (MISi) for all attributes tested.

$$WFi = \frac{MISi}{Total\ MISi}$$

Information:
MISi = I-th Mean Importance Score

3) Calculating the Weight Score (WS), this value is obtained through a Mean Satisfaction Score (MISS) multiplied by a Weight Factor (WF). The Mean Satisfaction Score (MISS), or the average value of the satisfaction level, is obtained from the average value of the Performance level or the average value of the work level.

$$WSi = MSSi. \ WFi$$

Information:
MSSi = I-th Mean Satisfaction Score
WFi = i-th Weight Factor

4) Calculating the Total Weighted Average (WAT), this valueis obtained by calculating the total Weighted Score (WS) of the first attribute (a_1) to the nth attribute (a_n)

WAT = Wsa_1 + Wsa_2 + … +WSa_n

Information:
Wsa = Weighted Score

5) Calculating the Customer Satisfaction Index (CSI), this value is obtained through a Weighted Average (WA) value divided by a Highest Scale (HS) and then expressed in percent. The Highest Scale (HS) is derived from the maximum Likert scale size used in weighting the level of importance and performance.

$$CSI = \frac{WA}{HS}.100\%$$

Information:
WA = Weighted Average
HS = Highest Scale (skalamaksimum)

6) Based on the Value of the Customer Satisfaction Index (CSI) index obtained, the satisfaction criteria that areas complete can then be known in Table 2 [29].

Table 2: Kriteria Customer Satisfaction Index (CSI)

Index Value (%)	Criterion CSI
0%-34%	Not Satisfied
35%-50%	Less Satisfied
51%-65%	Quite satisfied
66%-80%	Satisfied
81%-100%	Very Satisfied

4. Result and Discussion

Characteristics of Respondents
Based on the data from the distribution of questionnaires to generation Z obtained by 30 respondents with characteristics, most of whom live in the Special Region of Yogyakarta, a large number of them are female, the largest are students and college students, and most have never consumed herbal latte mix beverage or similar products.

Table 3: Characteristics of Respondents of Herbal Latte Mixed Drink Products

No.	Characteristics of Respondents	Group	Number of people	Percentage (%)
1	Address	a) Yogyakarta Province	22	73
		b) Outside Yogyakarta Province	8	27
2	Gender	a) Man	10	33
		b) Woman	20	67
3	Recent education	a) Junior High School	2	7
		b) High School	28	93
4	Work	a) Student/ college students	27	90
		b) Entrepreneurial	1	3
		c) Other	2	7
5	Status	a) Unmarried	29	97
		b) Married	1	3
6	Age	a) 12-19	10	33
		b) 20-27	20	67
7	Experience of consumption of herbal latte / similar mixed drinks	a) It has been	14	47
		b) Never	16	53

Product suitability rate

Table 4: Degree of Conformity of herbal latte mix products

Attribute	Importance Score (Y)	Skor Performance (X)	Suitability Level (TK) (%)	Priority Level
Price	131	101	77	2
Taste	136	91	67	1
Flavor	114	96	84	3
Color	107	105	98	6
Packaging	120	103	86	4
Practicality	119	117	98	6
Benefit	135	121	90	5
Average			86	

Table 4 shows that the average degree of suitability of herbal latte mixed beverages is 86%. The average shows that the product is very in line with consumer expectations. The attribute with the highest conformity level value is obtained by the color and practicality attribute, which is 98%. The attribute with the lowest degree of conformity is a taste of 67%.

Average Level of Performance and Importance

Table 5: Average Performance Level And Average Importance Level of Drink Products Mix Herbal Latte

Attribute	The average score of importance (YT)	Average performance score (XT)
Price (XY 1)	4, 37	3, 37
Taste (XY2)	4, 53	3, 03
Aroma (XY3)	3, 80	3, 20
Color (XY4)	3, 57	3, 50
Packaging (XY5)	4, 00	3, 43
Practicality (XY6)	3, 97	3, 90
Benefit (XY7)	4, 50	4, 03
Sum	28, 73	24, 47
Average	4, 10	3, 50

Based on Table 5, it is known that the average score of importance ($\bar{\bar{Y}}$) of 4.1, which is then used as the limit of the Y line while the average performance score ($\bar{\bar{X}}$) of 3.5, which is then used as the boundary of line X in the cartesian diagram.

Posisi each of its attributes in a cartesian diagram with ($\bar{\bar{X}}$) 3.5 and ($\bar{\bar{Y}}$) 4.1.
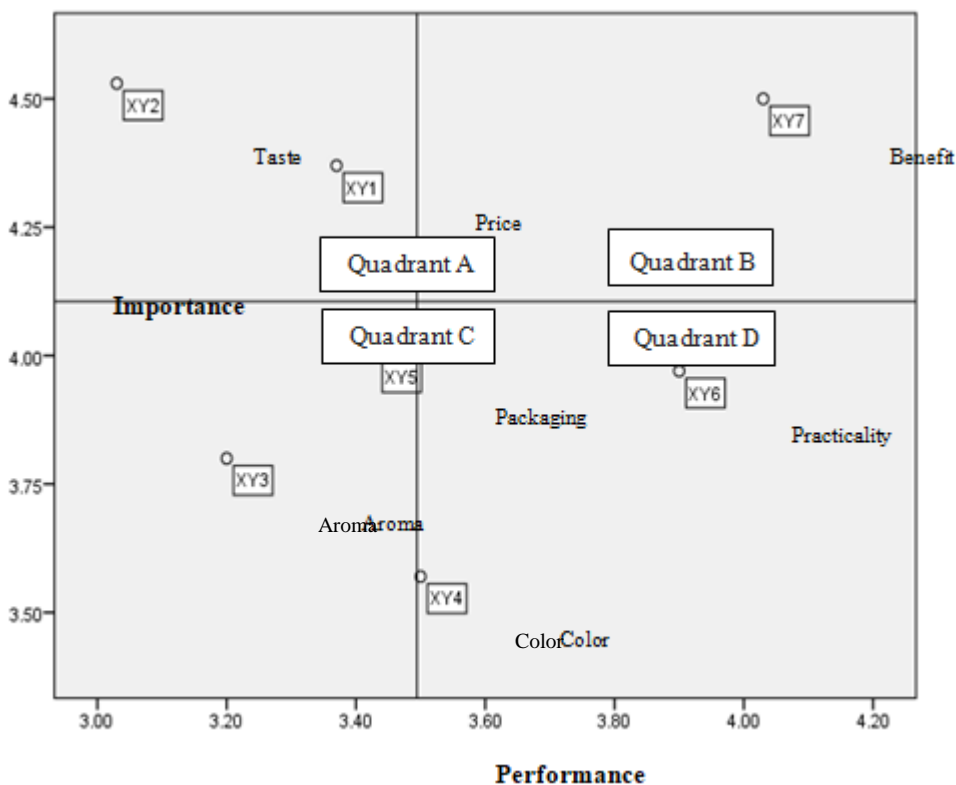
Figure 1: Cartesian Diagram of Products Mix Herbal latte

XY1: Price	XY5: Packaging
XY2: Taste	XY6: Practicality
XY3: Aroma	XY7: Benefit
XY4: Color	

Quadrant A (Concentrate Here)
Quadrant A in the IPA (Importance Performance Analysis) cartesian diagram shows the attributes considered important. In contrast, the performance given by the company on these attributes is not good or below the average performance. In this situation, efforts to improve these attributes should be the top priority of company X because they are attributes considered important by generation Z. Here are the attributes included in this quadrant.

The price offered on herbal latte mixed drink products ranges from IDR 40, 000-Rp. 50, 000 / box (contents of 15 pcs. Respondents judged the performance of these prices attributes to be not good. The price attribute of the product is an important factor and is an ingredient to consider for respondents when choosing herbal drink products. Thus the price attribute becomes the top priority that is improved or

improved by company X. 79% of respondents think that the price of herbal latte mixed beverage is affordable because if calculated, the unit only costs IDR 3, 000 / pcs. Therefore, the price performance is not good not based on affordability but because of the amount of nominal paid. The improvements can be done by increasing the product size but still maintaining prices or lowering the selling price [28]. Therefore, the effort to improve the quality of the price, namely by reducing the contents of the herbal latte mix drink product, which initially contained 15 pcs / box to 5 pcs / box, so that the product is more economical than the previous product.

A good product is the taste of the product that suits the tastes of generation Z. Taste attributes in this herbal latte mix drink are considered to be still not following the tastes of respondents. On the other hand, taste attributes are considered important or considered by respondents when choosing herbal latte mix drink products. Therefore, taste attributes are a priority that must be improved in quality.

As many as 76% of respondents suggested strengthening the product's taste. Efforts to strengthen the taste are by increasing the percentage of certain ingredients as suggested by the following respondents. Respondents liked the herbal product that tasted strongly of ginger. A research study has shown that the higher the level of ginger added to the drink, the higher the taste assessment by the panelists [30]. The suggestion regarding the addition of the percentage of latte is only 5%. However, based on discussions with the owner of company X, it is known that company X realized that the vegetable creamer (latte) used in herbal latte mixed products have a less concentrated taste, so the company wants to replace the creamer product used with a more concentrated creamer. Therefore, efforts to improve taste attributes were carried out by changing the composition of herbal latte mixed beverages following generation Z, increasing the percentage of ginger, and determining creamer products (lattes) with a more full-bodied taste.

Quadrant B (Keep Up The Good)

Quadrant B of the IPA (Importance Performance Analysis) cartesian diagram shows the attributes considered important and the attributes with good performance. In this condition, these attributes must be maintained by the company. Here are the attributes included in this quadrant.

The attribute of benefit in this study is interpreted as a benefit for body health that a person will get by consuming a latte herbal mix drink product. Herbal latte mix drink products have the same raw materials as herbal mix drink products, namely ginger, turmeric, and temulawak. Therefore, herbal latte mix drink products have the same benefits as herbal mix drink products. In addition, the company states that herbal mix products have benefits to help improve immune system performance and relieve stomach acid.

Company X's claim to herbal mix products is appropriate when reviewed based on the raw materials used. Based on clinical trials, curcumin in turmeric 40%-60%, can increase the body's immune system, which acts as an immunomodulator [31]. In other clinical trials, it was shown that ginger rhizomes have antiviral, anti-inflammatory, immunomodulatory, and antioxidant properties [32]. The claims of benefits for stomach acid are in line witha research study, which argues that natural ingredients such as ginger rhizomes, turmeric rhizomes, black cumin, and lemongrass can be used for dyspeptic prevention [33].

According to the respondents themselves, the benefits offered by company X on herbal latte mix beverages are considered good and needed by respondents. Therefore, the benefits of this herbal mix drink must be maintained by maintaining the quality of the raw materials used.

Quadrant C (Low Priority)

Quadrant C of the IPA (Importance Performance Analysis) cartesian diagram shows attributes considered unimportant while those attributes also have low performance. In this condition, these attributes become a priority for low improvement or improvement for the company. Here are the attributes included in this quadrant.

Aroma is related to the sensation smelled by the sense of smell in the herbal latte mix drink product when it is brewed. The aroma of this product is predominantly derived from ginger raw materials. Zingiberene compounds contained in ginger give ginger a fragrant taste [30]. Respondents judged that the aroma attributes in the herbal latte mix drink were not yet following taste. However, when choosing herbal beverages, respondents did not attach much importance to aroma attributes compared to other attributes (price attributes, taste attributes, and aroma attributes). A research study has shown that people's preference in consuming herbal beverages is not concerned with aroma and texture but rather concerned with the needs of the body [34]. Therefore, efforts to improve the quality of aroma attributes are the second priority for the company. Another research study showed that the higher the level of ginger used in the drink, the higher the level of assessment of semi-trained panelists [30]. Therefore, efforts to strengthen the aroma align with efforts to improve taste attributes, namely by increasing the percentage of the ginger composition. The high percentage of ginger in the product will later affect the stronger aroma of herbal latte mixed beverage (ginger aroma).

Herbal latte mixed drink products are packaged with cube-shaped box packaging with ivory 310 types. This packaging design is yellow with images of ginger rhizomes, turmeric, and temulawak, symbols of the raw materials used. According to respondents, the packaging attributes of herbal latte mixed beverages have not had a good performance. Respondents felt that the packaging had not been able to attract. The lack of such performance is not a priority because respondents are more concerned with taste, price, and benefits than packaging attributes. The appearance of the packaging must be able to attract attention visually, emotionally, and rationally [35]. A good design should consider all aspects, colors, shapes, composition, unity, balance, and others [36]. Attractive packaging has contrasting colors and images [37]. Therefore, company X can choose contrasting colors in packaging colors to make it look attractive.

As for the suggestion of practicality, the packaging form has a sustainable solution with efforts to increase price attributes, namely by reducing the contents of the herbal latte mix drink product per box. Furthermore, the less content of the product will certainly affect the shape of the packaging, which becomes slimmer and more practical in terms of its carrying.

Quadrant D (Possible Overkill)
Quadrant D in the IPA (Importance Performance Analysis) cartesian diagram describes attributes that are considered unimportant compared to other attributes, but on the other hand, their performance is good. In this condition, the quadrant is referred to as the excess area. Here are the attributes included in this quadrant.

The attribute of color in this study is the color seen when the herbal latte mix drink product is brewed. Herbal latte mix products do not contain synthetic dyes, so the color of this product is purely on the constituent components or raw materials. The drink's color largely depends on the raw material [38]. If the raw material used is old enough, the color caused will be dense and tend to be dark and vice versa.

The color of the drink product mixes herbal lattes after brewing and adds brownish-yellow and sugar. The color of the herbal latte mixed drink product is considered attractive and follows the tastes of respondents. However, this attribute was judged to be unimportant by respondents. The position of the color attribute in quadrant D but close to the limit of quadrant C shows that the color performance in herbal latte mixed beverage has a good performance at a low level.

The attributes of the practice in this study include the practicality of product presentation. Herbal latte mix drink products are served by brewing a dipping herbal mix drink bag and a latte with hot water. Adding other ingredients such as ant sugar or other sweetening ingredients can be done independently according to taste. The presentation in this way is considered to be practical by the respondents.

Customers Satisfaction Index (CSI) Products
Respondents' satisfaction with herbal latte mixed drink products based on the attributes studied can be known by the Consumers Satisfaction Index (CSI) method. This method uses an average score of importance level and an average score of performance level, which is then analyzed. Based on calculations obtained by the Z generation Consumers Satisfaction Index (CSI) for herbal latte mix products by 70%. The CSI value is in the index value of 66%-80% with the criterion of "satisfied" [29]. Therefore, the results were obtained that generation Z respondents were generally satisfied with the herbal latte mix drink product. However, the product must still be improved through its attributes so that competitiveness when it is marketed. The calculation of the Consumers Satisfaction Index (CSI) of herbal latte mix beverage is presented in Table 6.

Table 6: CSI Calculation of Herbal Latte Mix Products

Attribute	Performance (Xi)	Interests (Yi)	MIS	MSS	WF (%)	Wsi
Price (XY 1)	131	101	4, 37	3, 37	15	0, 51
Taste (XY2)	136	91	4, 53	3, 03	16	0, 48
Aroma (XY3)	114	96	3, 80	3, 20	13	0, 42
Color (XY4)	107	105	3, 57	3, 50	12	0, 43
Packaging (XY5)	120	103	4, 00	3, 43	14	0, 48
Practicality (XY6)	119	117	3, 97	3, 90	14	0, 54
Benefit (XY7)	135	121	4, 50	4, 03	16	0, 63
Sum		734	28, 73	24, 47	100	3, 50
Average		104, 86	4, 10	3, 50	14	0, 50
CSI = (Wsi/5) x 100%						70%

5. Conclusion and Recommendation

Generation Z's preference for herbal latte mix beverages on attributes that have a high level of importance, namely the product's price, taste, and health. The Customer Satisfaction Index (CSI) value of herbal latte mixed products of 70% shows that the generation Z satisfaction index is on the "satisfied" criterion but not optimal, so it still has to be improved. The attributes that are the top priority to be fixed are the price attribute and the taste attribute. The attributes that are the second priority to improve are the aroma attribute and the packaging attribute. Finally, the attributes that must be main are benefit attributes, color attributes, and practicality attributes.

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