

# An Investigation of Factors Influencing Women's Purchase of Sanitary Napkins Based on Theory of Reasoned Action and Marketing Mix Strategy

Xinyi Shi

No. 5 Middle School of Quanzhou, Quanzhou, Fujian, China

Email: 165474001@qq.com (X.Y.S.)

Manuscript received August 9, 2024; revised September 23, 2024; accepted October 18, 2024; published November 28, 2024.

**Abstract**—With a large population in China, sanitary napkins' consumption is increasing every year, thus, more and more companies are entering into this industry, which causes fierce competition. However, few studies focus on consumers' intention to purchase sanitary napkins. In addition, research on sanitary napkins mainly discussed the material, however, neglected factors influencing consumers' purchase intention. Therefore, this paper attempts to examine factors influencing consumers' sanitary napkins purchase intention. This study developed a comprehensive framework based on marketing mix strategy, and Theory of Reasoned Action (TRA) to support the four hypotheses. By analyzing 131 valid questionnaires using the application SPSS, the results showed that subjective norm, high quality, reasonable price, and brand image all had positive and significant influences on purchase intention. Among them, high quality has the greatest impact. Theoretical implications and practical implications were provided.

**Keywords**—sanitary napkin, marketing mix strategy, Theory of Reasoned Action (TRA), brand image

## I. INTRODUCTION

Daily necessities are common objects in people's lives, such as household effects, cosmetics, personal protective articles, and so on. Research on the Chinairn website shows that the volume of national daily necessities retail sales reached 66.1 billion in December 2002. Compared with last year, the figure increased by 8% in the same period. Among daily necessities, sanitary napkins have a considerable sales volume in daily necessities. From 2014 to 2019, the market size of sanitary napkins increased from 34.85 to 57.2 billion and the market competition for sanitary napkins is high-intense. Another noteworthy thing is that its market has a large room for future growth (Huang, 2021).

Despite the rapid development of sanitary napkins, with the development of techniques, more and more sanitary napkin brands are entering the market, leading to fierce competition. Some sanitary napkin brands occupy a great market share in China, but some possess little. Consumers are more willing to purchase sanitary napkins brands with greater market share and well-known brands, making small market share brands hard to develop.

Purchase intention is an important stage before making actual purchase behavior. Nevertheless, most prior research focuses on green products (Zhuang *et al.*, 2021), online purchase intention (Ha and Nguyen, 2019), purchase intention in the automobile industry (Jalilvand and Samiei, 2012), online music purchase intention (Chu and Lu, 2007). Research on sanitary napkins has also been conducted. For

example, Mamun *et al.* (2023) explored the application of breathable and leak-proof nonwoven composite materials on sanitary napkins. From prior research, it can be concluded that prior research still exists research gaps. Specifically, few studies focus on consumers' purchase intention of sanitary napkins. In addition, research on sanitary napkins mainly discussed the material, however, neglected factors influencing consumers' purchase intention.

This paper attempts to examine factors influencing consumers' sanitary napkins purchase intention. Since sanitary napkins are used by females, this study will target females. Therefore, in this paper, based on the research purpose, this study presents the following two research questions: (1) what factors influence females' intention to purchase sanitary napkins; (2) what factors exert a larger impact on purchase intention are the two main problems. To serve the research purpose, this study adopts both qualitative and quantitative research methods. Under the qualitative research method, the literature review method is used, while under the quantitative research method, the questionnaire method is used.

## II. LITERATURE REVIEW

### A. Purchase Intention and TRA

Purchase intention is defined as a factor used in the evaluation of purchase behavior execution possibility in the future (Blackwell *et al.*, 2001). Purchase intention is derived from the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). TRA proposes that attitude and subjective norms are the antecedents of people's intentions. Attitude can be either positive or negative. The more positive, the higher the intention to conduct a specific behavior. Attitude refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question (Ajzen, 1991)." "Subjective norms" can be described as an individual perception of social pressure on conducting or not conducting certain behaviors (Ajzen, 1991). Subjective norm involves the perceived social pressure to perform a particular behavior (Fishbein and Ajzen, 1975). TPB was developed by Ajzen (1991) based on TRA by adding a new factor of "Perceived Behavior Control" into TRA. "Perceived behavior control" reflected the easiness or difficulty in conducting a behavior that depends on the availability of resources and opportunities to conduct such behavior (Ajzen, 1991). Hansen *et al.* (2004) tested both TRA and TPB models and

the result showed that TPB could explain consumer behavior better than TRA.

Prior research has confirmed that subjective norms could significantly influence purchase intention. For example, Fishbein and Ajzen (1975) found that subjective norm was an antecedent of consumers' purchase intention. Ha *et al.* (2019) aimed to investigate the effects of factors on consumers' online shopping intention based on TPB and found that subjective norms positively and significantly influence purchasing intention. Subjective norms also play an important role in sanitary napkins, women may ask their friends or colleagues for advice on sanitary napkins and then choose the brand of sanitary napkins. Therefore, this study proposes that:

H1: Subjective norm positively influences purchase intention.

### *B. Marketing Mix Strategy*

Another theory that can explain purchase intention is the marketing mix strategy. Marketing mix strategy refers to the mixture of controllable marketing variables that the firm uses to pursue the desired level of sales in the target market (Kotler, 1984). The marketing mix strategy has experienced several development stages. For example, Frey (1961) suggests that marketing variables should be classified into two parts: a) the offering, including product, packaging, brand, price, and service; b) the methods and tools including distributing channels, personal selling, advertising, sales promotion, and publicity. Lazer and Kelly (1962) argued that the marketing mix should include three components: the goods and services mix, the distraction mix, and the communication mix. On the contrary, McCarthy (1964) offered the "marketing mix", often referred to as the "4Ps", as a means of translating marketing planning into practice. Borden (1965) proposed a new marketing mix, including 12 elements—product planning, pricing, branding, channels of distribution, personal selling, advertising, promotions, packaging, display, servicing, physical handling, and fact findings and analysis. McCarthy (1964) refined Borden's (1965) idea further and defined the marketing mix as a combination of all of the factors at a marketing manager's command to satisfy the target market. As a result, McCarthy reordered the 12 elements into four elements or 4Ps, namely price, product, place, and promotion. Although McCarthy's 4Ps strategy has been criticized as not a customer-oriented strategy but a production-oriented strategy (Popovic, 2006), McCarthy's definition is the most widely used one. Therefore, this study adopts McCarthy's view of point.

Regarding the product, it refers to a good or service that a company offers to customers. A product should fulfill customers' demand, or it may be so compelling that customers believe they need to have it and it creates a new demand. However, some sanitary napkin brands provide other products, such as different lengths or functions of sanitary napkins. Price is the cost consumers pay for a product. The price of the product depends on the cost of producing the product, competitors' prices, market demand, and how much consumers are willing to spend. At present, the price of sanitary napkins in China ranges from 2 RMB to 2.35 RMB/per from a report China New Economy viewpoint network. Promotion refers to specific and thoughtful

advertising that reaches a company's target market, the goal of promoting is to reveal why consumers need it and why they should pay a certain price for it. For instance, taking sanitary napkins as an example, there will be promotions on Women's Day and Mother's Day. The company will offer a gift box set to customers, for example, they will put different sanitary napkins in a set and sell them together at a lower price or they will launch one plus one promotion. The last one is place, which means where companies should sell a product and how to deliver the products to the market. Usually speaking, females can purchase sanitary napkins both offline and online. In terms of offline, examples include convincing stores, supermarkets online websites, etc. In terms of online, examples include online shopping malls such as Taobao, Tmall, Jingdong, etc. This study mainly focuses on price and product, because almost every sanitary napkin brand sells their products online and offline. In addition, almost every sanitary napkin brand promotes its products at different festivals through various approaches.

4Ps have been examined as antecedents of purchase intention. For products, consumers would like to purchase products that provide a considerable amount of extra value. Taking sanitary napkins as an example, sanitary napkins are a necessity for women, they are an item that women use every month. Skin-friendly features of sanitary napkins require high-level and healthy quality. Poor quality sanitary napkins are easy to cause some diseases; therefore, the quality standards of sanitary napkins are very important for women's physiological health. For prices, sanitary napkins are a necessity in women's daily life. Since females should purchase it every month and it has become a part of female's living expenses. The price of the sanitary napkins should be in an appropriate range. Thus, this study presents the following hypotheses:

H2: High-quality sanitary napkins positively influence purchase intention.

H3: The reasonable price of sanitary napkins positively influences purchase intention.

### *C. Brand Image*

Brand image is derived from Customer-Based Brand Equity (CBBE). CBBE is defined as the differential effect in how brand awareness affects how consumers react to that brand's marketing (Keller *et al.*, 2011). The definition of CBBE can be divided into three dimensions: (1) Differential effect which means differences in consumer response; (2) brand knowledge which means a result of consumers' knowledge about the brand; (3) consumer response to marketing which refers to the choice of a brand, response to a sales promotion. The premise of the CBBE concept is that the power of a brand lies in what customers have learned, felt, seen, and heard about the brand as a result of their experiences over time. To make sure that customers have a certain type of experience, such as products and services and their accompanying marketing programs, it will be a challenge for marketers to build a strong brand that has an impact. These experiences can lead to a result which is the desired thoughts, feelings, images, beliefs, perceptions, opinions, and experiences become linked to the brand. When people respond more favorably to a product and the way it is marketed when the brand is recognized than when it is not, a

brand has positive CBBE. Thus, brand knowledge is the core of the CBBE.

Brand knowledge has two parts (1) brand awareness and (2) brand image. Brand awareness includes brand recognition and brand recall, which means whether customers can recognize a specific brand when facing a set of products or whether customers can recall a specific brand when communicating about some products. Creating a positive brand image takes marketing programs that link strong, favorable, and unique brand associations to the brand in memory. What is more, brand associations may be either brand attributes or benefits. In some cases, brand awareness alone is enough to create favorable consumer response; for example, in low-involvement decisions when consumers are willing to base their choices on mere familiarity. In most other cases, however, the strength, favorability, and uniqueness of brand associations play a critical role in determining the response that makes up brand equity. So, brand image is the core of brand knowledge, as well as the precondition of the CBBE. However, previous studies focused more on the impact of product features on consumers' purchase intention and ignored the impact of brand image. The influence of brand image on consumers' intention to purchase sanitary napkins is worthy of further study. CBBE happens when the consumer is well aware of the brand, is familiar with it, and has strong, positive, and distinctive brand connotations in their minds. In the context of non-deceptive counterfeiting, Bian and Moutinho (2011) investigated the influence of perceived brand image, direct and indirect effects (mediator and moderator effects) of product participation, and product knowledge on consumer purchase intention. According to their findings, purchase intention and normative interpersonal impacts were significantly moderated by brand image. Therefore, this study presents that in Fig. 1:

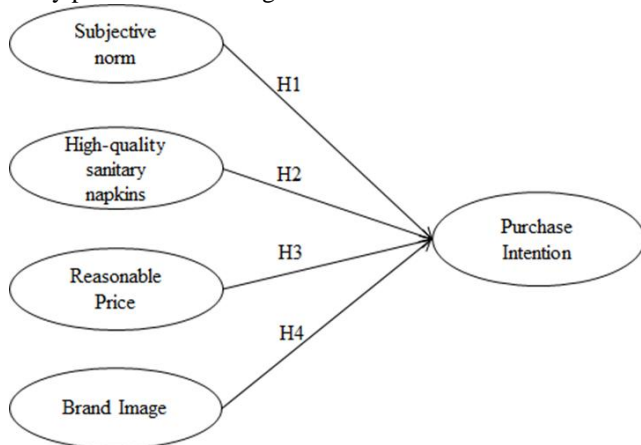


Fig. 1. Research model.

H4: Brand image positively influences purchase intention.

### III. METHOD

#### A. Measurement Items and Procedure

The questionnaire includes two parts: basic information and measurement items part. The measurement items part includes measurements for the five constructs in our study, which are Subjective norm; Brand image; Price; high quality; and Purchase intention. The questionnaire has 18 questions in

total (3 items about the basic information, and 15 items about the main constructs). The respondents were asked to fill out the questionnaire online. Subjective norm was measured using 3 items adopted from Herrero *et al.*, (2006), Taylor and Todd (1995), and Agarwal *et al.* (1998), with the 3 items the responders were asked if the people around them have an impact on purchasing sanitary napkins. The brand image was assessed using 3 items from Davis *et al.* (2009). Purchase intention was measured by 3 items from Shukla (2011). Price and high quality were each evaluated through using 3 items. All the measurements were measured using a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. Items are shown in Appendix A in detail.

The questionnaire mentioned above was made by a platform, called Wenjuanxing, which is a professional online questionnaire survey, examination, evaluation, and voting platform, focusing on providing users with powerful and humanized online questionnaire design, data collection, custom reports, survey results analysis, and other services. Compared with traditional survey methods and other survey websites or survey systems, Wenjuanxing has obvious advantages of being fast, easy to use, and low cost, and has been widely used by a large number of enterprises and individuals. The research targets are predominantly female, being women who had purchased sanitary napkins. To screen out the research targets of this study. The 3 questions were about basic information, respondents were required to answer age, gender, and whether to purchase the sanitary napkins or not. There is an excellent advantage of Wenjuanxing that all the questions are set to be answered compulsorily. The questionnaires were sent to various platforms, such as WeChat, Weibo, Wenjuanxing, etc. Finally, 159 respondents were collected through around 2 weeks. For this study, those respondents who answered males and those respondents who had not purchased sanitary napkins were invalid and were removed. What is more, the questionnaire that only took a few seconds to answer is also invalid. Finally, this led to 131 valid data.

#### B. Pilot Test

Before conducting the whole analysis, this study conducted a pilot test to check the reliability and validity of the questionnaire. 50 valid data were collected and were tested using SPSS. The results showed that the Cronbach's alpha of all the variables were exceeded the threshold of 0.7. All the factor loadings of the measurement items were also greater than the threshold of 0.7. All the analysis indicates a good reliability and validity of our questionnaire.

#### C. Descriptive Analysis

In the questionnaire, it is clear to see that more females than males took the questionnaire, 102 females and 57 males. In terms of age, the largest percentage can be seen in the age group 19–29, which occupied 37.4%. Meanwhile, the proportion of people aged 30–39 was 31.3%. Noticeably, those people aged below 18 occupied 16.89%, a close tie with the people who are in their 40s (12.2%). More detailed data is shown in Table 1 below.

Table 1. Descriptive statistics of respondents.

Respondents	Category	Count	%
Gender	Female	88	67.2
	Male	43	32.8
	Below 18	23	17.6
Age	19–29	49	37.4
	30–39	41	31.3
	40–49	16	12.2
	Above 49	2	1.5

#### IV. RESULTS AND ANALYSIS

##### A. Reliability and Validity Test

Table 2. Reliability and validity results.

Variables	Measurement items	Factor loadings	Cronbach's alpha ( $\alpha$ )	AVE	C.R.
Subjective norm	SN1	0.873	0.814	0.731	0.890
	SN2	0.832			
	SN3	0.860			
Brand image	BI1	0.879	0.803	0.731	0.890
	BI2	0.839			
	BI3	0.846			
Reasonable Price	RP1	0.881	0.828	0.745	0.897
	RP2	0.862			
	RP3	0.846			
High-quality	HQ1	0.804	0.751	0.668	0.801
	HQ2	0.807			
	HQ3	0.840			
Purchase intention	PI1	0.823	0.726	0.646	0.780
	PI2	0.782			
	PI3	0.806			

This study used the Software Statistical Package for the Social Sciences (SPSS) to analyze the data. SPSS is a statistical software suite developed by IBM for data management, advanced analytics, multivariate analysis, business intelligence, and criminal investigation. What is more, the SPSS is a widely used software for statistical analysis in social science and it is also used by market researchers, health researchers, survey companies, government, and so on. The many features of SPSS are accessible via pull-down menus or can be programmed with a proprietary 4GL command syntax language. Command syntax programming has the benefits of reproducible output, simplifying repetitive tasks, and handling complex data manipulations and analyses. Additionally, some complex applications can only be programmed in syntax and are not accessible through the menu structure. The pull-down menu interface also generates command syntax: this can be displayed in the output, although the default settings have to

be changed to make the syntax visible to the user. They can also be pasted into a syntax file using the “paste” button present in each menu. Programs can be run interactively or unattended, using the supplied Production Job Facility. Therefore, SPSS can be a good tool to deal with the data.

Before testing the hypotheses, the data needs to be tested for reliability and validity. A reliability test is an analysis of the accuracy of the measurement results of a questionnaire, a test of the reliability of the data results obtained from a designed questionnaire under multiple repeated use. The role of reliability analysis is to test the consistency or stability of the results. The Cronbach's alpha is used for assessing the reliability. Cronbach's alpha should be larger than 0.7, and the larger the Cronbach's alpha, the more reliable it is. More detailed data can be seen in the hypotheses test.

##### B. Hypothesis Test

This study used the linear regression method to test the hypotheses. According to Fig. 2, in terms of reasonable price, its value of  $t$  is 2.046 which is higher than 1.96 and the value of  $p$  is 0.043 which is lower than 0.05. The beta for price is 0.148, meaning a reasonable price influences the purchase intention for sanitary napkins. Brand image was proved to affect purchase intention ( $\beta = 0.213$ ,  $t = 2.430$ ,  $p = 0.017$ ). The  $p$ -value was also lower than 0.05. Subjective norm also has an impact on purchase intention ( $\beta = 0.227$ ,  $t = 3.294$ ,  $p = 0.001$ ), compared to reasonable price and brand image, the subjective norm has a considerable impact on the sanitary napkins' purchase intention. Noticeably, the beta for high quality was 0.278 and the value was lower than 0.05, supporting H2. Accordingly, all four hypotheses were supported in this study. The factor of high quality has the greatest influence on the sanitary napkins' purchase intention, followed by subjective nor, brand image, and reasonable price.

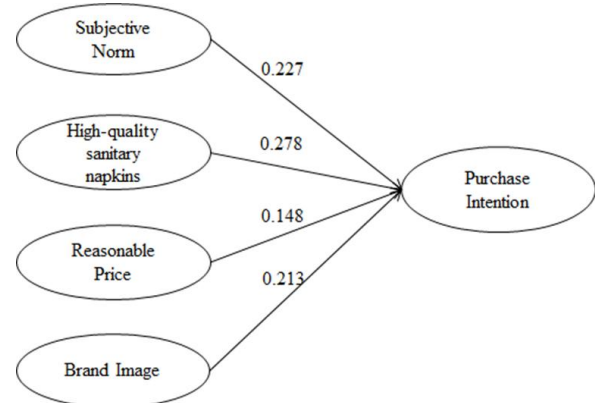


Fig. 2. Research model results

#### V. DISCUSSION

##### A. Research Implications

###### 1) Theoretical implications

This study provides significant theoretical implications to the academic. First, this research indicates that sanitary napkins have a large market share, and the noteworthy thing is that its market has a large room for future growth (Huang, 2021). In addition, more and more sanitary napkin brands are entering the market, leading to fierce competition, therefore it is important to find out what factors influence the sanitary

napkins' purchase intention, to provide useful suggestions to the relative companies.

Second, this study determined the factors influencing the purchase intention of sanitary napkins. Unlike other papers related to sanitary napkins, the previous study all focused on the materials of sanitary napkins, and few studies pay attention to the purchase intention for sanitary napkins. By contrast, this study defined four variables from the perspective of women, which are price, quality, subjective norm, and brand image. These four factors are more likely to have impacts on the sanitary napkins' purchase intention. In addition, many researchers studied the purchase intention of green products rather than sanitary napkins, while this study has studied the purchase intention of sanitary napkins. Also, this study identified which factors exerted the biggest impact on the sanitary napkins' purchase intention.

## 2) Practical implications

This study provides some suggestions to sanitary napkins merchants to attract consumers and increase the sales volume. First of all, companies should take price, quality, and brand image into consideration, because the three factors all have influences on the sanitary napkins' purchase intention. Secondly, the companies should pay more attention to the quality, such as water absorption side leakage resistance and other common problems, if these functions can be better or improved, more consumers may tend to purchase the brand, and the sales volume will increase.

## B. Limitations and Future Studies

Despite the contributions and implications, this study has several limitations. First, the sample of this paper is limited and only has 131 valid data. The results may not respond to an average attitude toward purchasing sanitary napkins. Future studies can target different age groups, and different occupation groups to collect more data. Second, the references are not enough, and only had 21 papers. Future studies can read more papers. Thirdly, this study did not consider more factors, so the factors that influence sanitary napkins' purchase intention are partial, there must be other factors influencing it. Future studies can make a survey on other factors, also based on this study, future studies can find out what kind of quality can have an impact on the sanitary napkins' purchase intention.

## VI. CONCLUSION

This study's purpose is to investigate the factors influencing women's purchase intention of sanitary napkins. For this purpose, the structural equation modeling method was introduced in this study. By reviewing the literature, four factors are defined as the variables to influence the purchase intention. What is more, before this research, two research questions were also examined (1) What factors influence females' intention to purchase sanitary napkins; and (2) what factors exert a larger impact on purchase intention are the two main problems. The data analysis showed that all the factors influenced the sanitary napkins purchase intention. In terms of the path coefficient, if the t-value is higher than 1.96 and the p-value is less than 0.05, then the hypotheses were supported. In this research, all the data for t-value is higher than 1.96 and the p-value is less than 0.05, which means the hypotheses are all supported, the four factors are all

associated with sanitary napkins' purchase intention.

## CONFLICT OF INTEREST

The author declares no conflict of interest.

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