

Exploring Perception on Sizing and Fit of Clothing for Malaysian Children

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Abstract: *The proliferation of clothing industry is caused by clothes not only for basic necessity but also as a trendy fashion. Meeting appropriate sizing and comfort clothes are the most important elements for consideration of purchasing. Currently, not much study found that exactly defined the satisfaction on fit for children clothing in Malaysia. The ambiguity will be answered by this study which the perception on sizing and fit of clothing for Malaysian Children from the perspective of parent or guardian will be explored. Their expectations for the best fitting of children's clothes have been discussed. Girth and length were used in measuring key dimensions which were height and bust for upper body and height and waist girth for lower body. Analysis of variance (ANOVA) has been performed resulted that only higher income households had greater discrepancies with respect to expectation and satisfaction level items than lower income household (p-value=0.007). Overall, the result revealed that parent or guardian were not satisfied on the current sizing system which the size labeled were differ between brands and manufacturers. This could lead to consumer confusion and dissatisfaction in clothing selection for both shopping channel which physical stores are or via online.*

Index Terms: *Exploration; Sizing and Fit; Perception.*

I. INTRODUCTION

Clothes are very important for human being. Clothes will make someone looks elegant and also can tell a lot about an individual's status, personality and career. Nowadays, clothes are no longer a basic necessity, but it has turn into a trendy fashion which encourage the proliferation of bricks and mortar, and online stores. In Malaysia, online shopping become poised for significant growth among Malaysian consumers and based on Wu & Tseng (2014), it caters to the busy lifestyle of modern people. The world of fashion is at their fingertips. The Internet User Survey 2017 (Malaysian Communications and Multimedia Commission, 2017) has found that 24.5 million (76.9%) of Malaysian population are internet users and 48.8% of them do online shopping which is much higher compared to 2016 survey which was 35.3%. Even though the percentage of Malaysian population who shopping via online increases, but another 51.2% internet users still prefer going to stores as they can collect items

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immediately and prefer to see, touch, and try on merchandise before making a purchase. Even though many researches have been done on consumers shopping satisfaction, both at physical stores and online, there is still a need to address the issue of their satisfaction with their purchasing experience especially for children clothing selection.

Shopping is not only simply buying products per se but also the product bought must fulfil consumer requirements (Gregson, N., Crewe, L., & Brooks, 2002). Consumers are likely to select the purchasing channels that offer the best clothes fitting which fulfil their need and expectation (Gagliano & Hathcote, 1994). Consumers' sizing and fit have been cited as key causes of consumers' dissatisfaction (Labat & Delong, 1990; R. B. Otieno & Fairhurst, 2000). The major problem is specifically related to sizing and fit especially consumers who cannot see the real clothes before buying them online. This in turn increase the number of returned clothes and causing company incurred additional expenses. The sizing and fit issues is not a unique issue among online shopping user but also to consumers who buy clothes at the stores. For the best fitting, consumers usually will try out clothes while shopping that are troublesome and time consuming. Study done by Colls (2004), found that trying on clothing is in fact a tedious process that can cause consumer feeling depress and uncomfortable. Many studies have been done to understand the consumer satisfaction in clothes sizing and fit but as of now, there is no research defined the satisfaction on fit for children clothing in Malaysia. The main focus of this study is to explore perceptions on sizing and fit of clothing for Malaysian children. This study is divided into 4 objectives;

- To identify the specific aspects of evaluations on sizing and fit that are most concern by consumers while making clothes selection.
- To determine problems that consumers encounter on sizing and fit while purchasing clothes to children.
- To determine problems that consumers encounter on sizing and fit while purchasing clothes to children via online.
- To identify any significant difference between genders, ages, races, residence areas and household incomes in respect of expectation and satisfaction level items.

Why does this study choose to focus on children clothing? Why not men or women apparel? This is because children often outgrow clothes very fast, thus the purchase of children's clothing is frequent, and this can be very costly affair. According to Zakaria, Taib, Tan, & Wah (2008), choosing the right-fit clothing is important for children since



it is related to the conformity of clothes to the body . The standardization of fit and sizing system is essential, especially for children since the variation in growth patterns will result they have very unique body shape and measurement (Gupta, 2006). The statement is parallel with the finding by Bong, Shariff, Mohamed, & Merican (2015) that said the median length of Malaysian children under six years old was higher than the WHO (2006) and CDC (2002) standards.

II. LITERATURE REVIEW

A. The importance of clothes

Clothes become one of the most important need for children. Shin (2013) mentioned that good fit in clothing is related to an appropriate length and tightness clothes on body. Gupta (2011) in his study about functionality clothing said that clothing would normally made by the mixing of innovative materials. The functionality of clothing is not only for protection against harsh climate and environment but also modesty in social and cultural situations. Gautam (2005) has added that comfort features are paramount important for children clothes. Their clothes should be flexible and adjustable for the rapidly growth of body with attractive in design and fabric.

B. Consumer satisfaction with clothing

Kim, Fiore, & Lee (2007) defined satisfaction as a perception fulfilled with pleasurable of consumers' experiences. The consumer satisfaction involves delivering quality products that meet the needs of consumers (Reid & Brown, 1996). While satisfied consumers are likely to influence others to buy, dissatisfied consumers will complaint, return goods and give negative comments (Rose Otieno, Harrow, & Lea-greenwood, 2005). Norum (1995) found that sizing and fit problems were significantly related to satisfaction with the shopping experiences. Satisfaction with the shopping experience will also contribute to the product satisfaction. These results have tangible implications for apparel marketers i.e. a good sizing system contributes to better fit and lowers the cost of purchase.

The concept of always buying children clothes one size bigger for children is gradually on the way out. A focus group done by Hong Kong Trade Development Council (2015) stated that this concept should not be used since children cannot move around freely in loose, bulky oversized clothing and also wearing oversized clothes could lead to potential accidents. Additionally, the current generation of parents is very concerned about their children appearance and pay considerable attention to fashion trends.

C. Shopping via online; returning issues

The proliferation of online stores are caused by the development of the internet facilities (Wu & Tseng, 2014). In 2016, 17.9 million Malaysians accessed the internet via their mobile phones. By 2020, this figure is expected to reach 21.1 million mobile phone internet users (resource from the survey done by Statistica and reported by Hong Kong Trade

Development Council (2017). Mobile phone internet usage made online shopping easier and convenient to shop anywhere and at any time. Malaysia Digital Economic Corporation (MDEC) Director of E-commerce Enablement, Wee Huay Neo told in The Sun Daily (2017), that Malaysian consumers are shopaholic, with 7% of online shoppers making purchase almost daily, 26% once a week, 54% once a month and the remaining 13% make a purchase once a year. Report from U.S. Embassies abroad (2018) said that fashion and accessories led the sector in Malaysia online shopping. However, Bill O' Farrell, Body Labs chief executive officer mentioned in Sourcing Journal (2016), that about 20 to 25 percent of all apparel bought online is returned, and about 64 percent of those returns cite a problem, mostly because of sizing and fit issues. The purchasing of wrong size clothes requires time to return and exchange that caused hassle to consumers and a costly nightmare for retailers, who would need to bear the cost of "free" return.

D. Children's clothes fit and sizing issues

According to Norum (1995), regardless of how attractive the clothes are, how easy to care the clothes or money for value of the clothes, it is useless if the clothes do not fit the children. This is a major problem for parents who have 'hard-to-fit' child. The discontentment of clothes sizing and fit will cause bad shopping experience. Kasambala (2014) added that fit is defined as a clothes comfort to the body which the wearer feels looked good and easy to move. According to Zakaria (2016), there are several reasons why clothes might not fit. She opined that there is no standardization in clothes sizes and the sizing system used is not based on anthropometric data.

E. Anthropometric measurements

According to Manu and N. Khetarpaul (2005), the body dimension measurements involve weight, height, waist and hip circumference is called anthropometric measurements. Based on the Oxford Dictionary, anthropometry is a scientific research project of the measurements and proportions of the human body. The structure of the sizing system is based on the division of the target population into subgroups that have similar body dimension (Zakaria, 2016). According to Bari, Salleh, Sulaiman, & Othman (2015), anthropometric data play an important role in creating garment sizing system. They added that anthropometric survey should be done in population to get an accurate garment sizing. Garment will not fit on the body if the size is inaccurate with the body. Anthropometric measurements include several factors namely gender, age, ethnicity, development and growth, lifestyle, age, social class, occupation and personal items (Fernandez, 1995). Other factors that influence a person's body measurements include culture, genetics, health and nutritional factors (Manu and N. Khetarpaul, 2005)

III. METHODOLOGY/MATERIALS

A. Instrumentation.

This research focusing on perception's parents or guardian regarding to sizing and fit of newborn to 6 years old children's clothing. Based on the reference and input from focus groups discussion, a survey instrument was developed to suit the objectives of this research. The main reference in developing this questionnaire was journal written by (R. Otieno, 2000; Zakaria et al., 2008). Five sessions of focus group discussion have been organized which all the parent or guardian involved came from different background of educations and working fields. Based on Fern, E. F., & Fern (2001) the ideal number of participants required for focus group may range anywhere between 1 and 30 or more depending on research purpose. In this study, each session containing 6 to 8 participants. There are in total 33 parent or guardian participated in this discussion in every consecutive Saturday within July 2018. The details of participants are shown in Table 1. An approximately 30 minutes were spent by every group. This discussion is mainly to look into the real problem facing by parent or guardian regarding to their children's clothes sizing and fit.

Table 1: Details of Parent and Guardian Participated in Focus Group

Session	Participant	Education Background	Working Field
1	6	SPM, Bachelor Degree	Banking, Education, Housewife
2	6	Bachelor Degree, Master Degree	Business, Banking, Education
3	8	SPM, Diploma, Bachelor Degree	Housewife, Education, Administration
4	7	SPM, Certificate	Administration, Manufacturing
5	6	Bachelor Degree, Master Degree	Banking, Administration, Law

The questionnaire begins with parent or guardian basic demographic questions that placed in section A. The questions containing the information regarding to gender, age, race, household income and residence area. Section B is mainly divided into 3 major discussions which are; specific aspect that participants the most concern at for children's clothes sizing and fit, experiences on problems with sizing and fit while purchasing children's clothes, satisfaction rating on sizing system and online shopping in Malaysia. Five points of Likert scales has been used to rating the respondents' experiences and level of satisfaction. The points were recoded into 3 scales while reporting the result. Apart from that, the respondents are given several open-ended questions to write down their comments or to justify their answers.

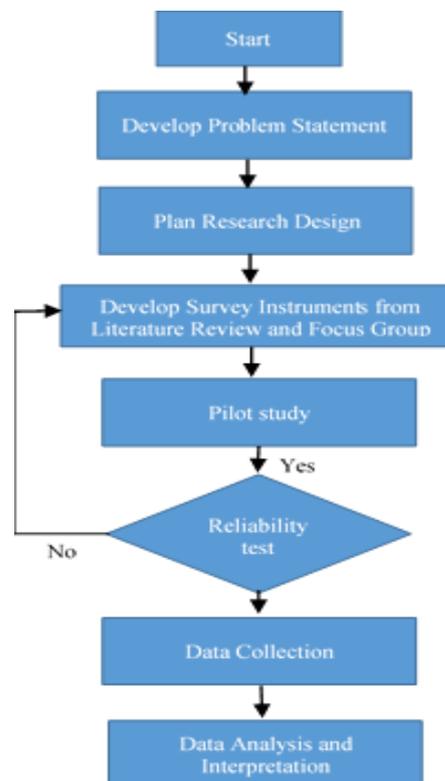


Fig 1: Research Methodology

B. Sample and reliability test

Initially, 50 parent and guardian were selected among Universiti Kuala Lumpur staff and post graduate students as respondents in pilot study.

Upon fulfilling the reliability and validity requirement, it is very important to test the validity of the instruments of pilot study before proceeding to real data collection. Cronbach alpha was developed by Lee Cronbach in 1951 (Cronbach, 1951). According Tavakol & Dennick (2011), it should be noted that the reliability of the questionnaire is closely associated with the validity of the result. Tan (2007) added that the closer the estimated Cronbach's alpha coefficient approaches to value 1, the higher the internal reliability of multi-item scales. In this exercise, Cronbach' alpha is used to test the reliability and consistency multi item scale, parent or guardian experiences and views on sizing and fit while purchasing of children's clothes. The value is 0.837, which indicates the reliability of the items in research instruments used. With the high value of Cronbach alpha, it was decided to remain the instruments of questionnaire in pilot study for the real data collection.

A total of 143 questionnaires were gathered from the total of 250 questionnaires that have been distributed randomly to amongst parent or guardian from several childcare centers and pre-school around Klang Valley. The study was conducted in August 2018.

C. Test of significances between expectations and satisfaction level among demographic characteristics.

Analysis of variance (ANOVA) were used to determine the effect of various parent or guardian demographics (age, race, household income and



residence area) on their children’s clothes sizing and fit expectations and satisfaction levels.

Student T (T-test) is used to determine whether there is a significant difference between the means of two groups. In this study, mean expectations and satisfaction levels among genders and residence areas were tested.

Statistical Program for the Social Sciences (SPSS) software was used to analyze the quantitative data. The whole process of methodology is illustrated in Figure 1.

IV. RESULTS AND FINDINGS

A. Demographic and Socioeconomic Characteristics

Table 2 shows the demographic and socioeconomic characteristics of respondents, which parents or guardian are involved.

Table 2: Demographic and Socioeconomic Characteristics of Parent or Guardian (N=143)

Characteristics	N	%
Age		
Male	63	44.1
Female	80	55.9
Age		
<20 years	19	13.3
20-25 years	20	14.0
26-30 years	3	2.1
31-35 years	3	2.1
36-40 years	10	7
41-45 years	30	21
>40 years	58	40.6
Race		
Malay	104	72.7
Chinese	27	18.9
Indian	12	8.4
Household Income		
<RM2,000	23	16.1
RM2,001 - RM5,000	28	19.6
RM5,001 – RM8,000	36	25.2
RM8,001 – RM10,000	22	15.4
RM10,001 – RM13,000	15	10.5
>RM13,001	19	13.3
Residence Area		
Urban area	107	74.8
Rural area	36	25.2

A total About 250 questionnaires was distributed, 157 were received and yielding a response rate is 62.8 %, 143 usable and 14 were incomplete. Among the respondents, there were 63 (44.1%) were male, while the remaining were female (80, 55.9%). A majority of parent or guardian who involved in this study were Malay (104, 72.7%), followed by Chinese (27, 18.9%) and Indian (12, 8.4%). Based on age, more than half of the respondents were in 41 years old and above age category, which is 88 (61.5%). An approximately, the highest number of respondents (36, 25.2%) indicated a household income in between RM5001.00-RM8000.00 per

month. There are 23 parent and guardian have household income less than RM2,000 per months, whereas 19 (13.3%) indicated household income up to more than RM13,000 per months. The parent or guardian residence areas were also has been considered as one of the interest demographic characteristics. One hundred and seven (74.8%) of them live in Urban area and the remaining live in rural area.

Table 3: Cross Tabulation Between Household Incomes and The Willingness of Parent or Guardian to Pay More for Better Fit

	Never	Sometimes	Often
<2000	1	8	8
2001-5000	0	17	10
5001-8000	1	9	8
8001-10000	2	4	14
10001-13000	2	7	22
0			
>13000	0	3	27

In this study, 0.05 significant level was set as an indicator. By using T-test, all the expectation] and satisfaction level items have been compared among genders and residence areas. The result show that, the p-values for both sample means were more than 0.05 significance level. ANOVA will provide evidence on mean differences occurred (if any) between expectations and satisfaction level among ages, races, household incomes and residence areas. After the ANOVA was performed, all the p-values generated were more than 0.05 significance level except for the willingness of parent or guardian to pay more for better fit item (item in Figure 6) compared to household incomes. The p-values more than 0.05 indicates that no significant different all the items between genders, ages and races. It can be concluded that higher income households had greater discrepancies with respect to expectation and satisfaction level items than lower income parent or guardian (p-value = 0.007). The result show in Table 3 has supported the conclusion. Majority of parent or guardian who have salary RM8,001 and above, more willing to pay extra for their children’s clothes better fit.

B. The Expectations on Children’s Clothes Sizing and Fit

Table 3 shows the details about parent or guardian expectations on specific criteria evaluations of body that contribute to the best fitting of children’s clothes.

Table 4: Parent or Guardian Expectations on Children’s Clothes Sizing and Fit

Top	N (%)	Pant	N (%)	Skirt	N (%)	Dress	N (%)
Bust fit well	105 (73.4 %)	Suitable waist elasticated	98 (68.5)	Suitable waist elasticated	90 (62.9)	Suitable length	37 (25.9)



Suitable shoulder length	91 (63.6%)	Suitable length	102 (71.3%)	Suitable length	101 (70.6%)	Suitable hip girth	28 (19.6%)	
Sleeves fit well (not too long or short)	97 (67.8%)	Suitable hip girth	98 (68.5%)	Suitable hip girth	101 (70.6%)	Bust fit well	37 (25.9%)	
Comfortable neck girth	107 (74.8%)	Suitable waist girth	98 (68.5%)	Suitable waist girth	101 (70.6%)	Sleeves fit well	32 (22.4%)	
Others: Suitable arm girth, Suitable wrist girth, Suitable armhole, Suitable elbow girth	Others: Appropriate thigh girth, Suitable cervical to knee hollow length	Correct inseam	109 (76.2%)	Openings should be sufficient	115 (80.4%)	Others: Not transparent, opening should sufficient	Dress drapes well	30 (21.4%)

Similar with Zakaria et al. (2008), the specific aspects that used in this study were divided into 2 factors; girth and length. Height and bust for upper body and height and waist girth for lower body were selected as a key dimension for girth and length factors respectively. The selection was based on the highest factor loading calculated by principle component analysis (PCA), which is more than 8 factor loading score. In this study, parent or guardian were requested to express their expectations on their children's clothes by response on specific criteria of evaluations based on girth and length. The specific criteria evaluations were divided into 4 categories such as top or blouse, pant, skirt and dress which covered upper and lower bodies. All the specific criteria will be a guideline for parent or guardian in making decision on children's clothes selection to ensure their expectation were fulfilled.

C. Experiences while purchasing children's clothes.

Based on the Figure 2, more than 70% of parent or guardian who involved in this study have complained that they faced problems regarding to incomprehensible sizing code, confusing information and inconsistency of sizing system within and between brands.

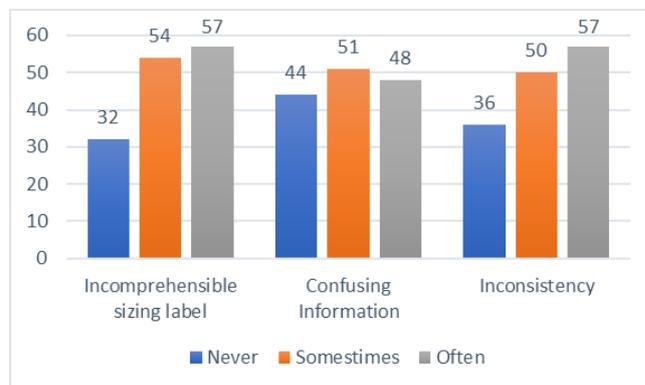


Fig 2: The Most Common General Problems about Children's Clothes Sizing

Parent or guardian faced incomprehensible sizing label problem in identifying the correct clothing size for their children when manufacturers use alphabet typing as a clothes' label i.e. small (S), medium (M), large (L), extra-large (XL) sizes. According to R. Otieno (2000), manufacturers should label size based on height i.e. length for pant or skirt and body part description i.e. fit bust size for top/blouse and waist girth for pant/skirt. This will be the easiest to comprehend as compared to alphabet typing. Inconsistency of sizing system and different system international of units (SI) among manufacturers also lead to parent or guardian confusion in clothing selection.

The above finding is parallel with result in Table 5 which some parent or guardian have a problem in estimating their children's clothes size if the label was based on age or age ranges. The age label sometimes not illustrate the actual children's size.

Table 5: Clothing Label Differ from Actual Children Age

Label on clothes	Clothes is labelled 4 or more years younger than child's actual age	Clothes is labelled 2-3 years younger than child's actual age	Clothes is labelled 1 year younger than child's actual age	Clothes is labelled 1 year older than child's actual age	Clothes is labelled 2-3 years older than child's actual age	Clothes is labelled 4 or more years older than child's actual age
N(%)	45(30.8)	45(30.8)	50(34.2)	45(30.8)	47(32.2)	28(19.2)

Figure 3, 4 and 5 shows the details of the most common problems while purchasing clothes according to categories which are shirt or blouse (top), pant and dress. All the problem as stated in Figure 3, 4 and 5 can be resolved if the standardization of sizing system can be introduced which it can fulfill consumers' requirements and expectations.

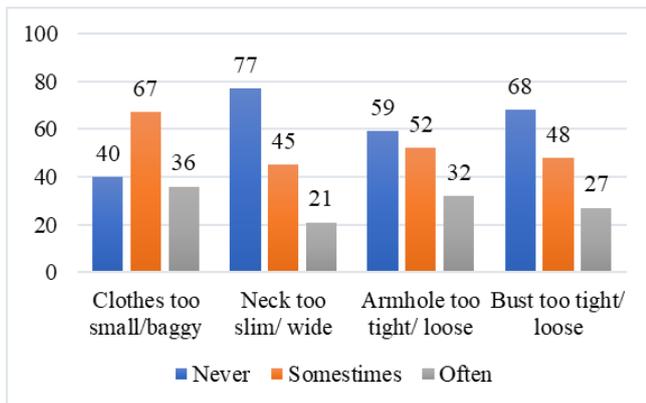


Fig 3: The Most Common Children’s Shirt or Blouse (Top) Sizing Problems

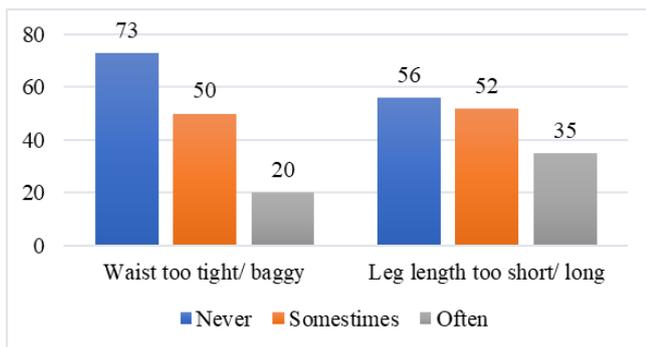


Fig 4: The Most Common Children’s Pant Sizing Problems

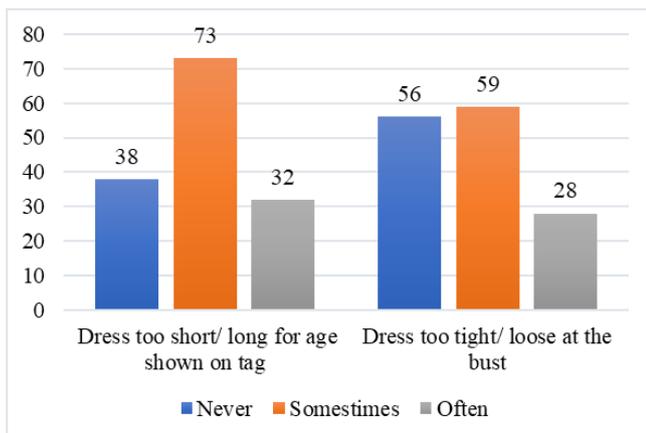


Fig 5: The Most Common Children’s Dress Sizing Problems

Based on Figure 6, parent or guardian prefers to bring their children together while shopping. One hundred and 7 (74.8%) of them said that children present is the must for them to easy-measure the size. According to Balasubramanian (2006), many retailers said that the consumer had to try on clothes in the store, since fashion and style affect fit. He added that retailer assign promoters to assist consumers to give an appropriate advice on fit. Good quality of products and service from retailers, will create loyal consumers that will repeat visits and purchasing. At the same time, parents also willing to pay more for the values.

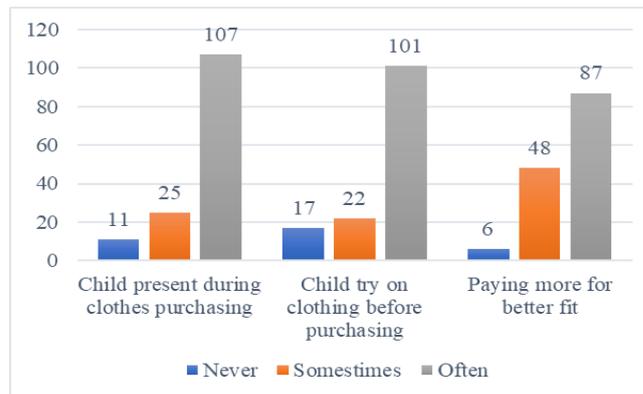


Fig 6: The Most Common Problems while Shopping

D. Views on the children's clothing online system.

Online stores offer consumers an alternative shopping channel. Based on the Figure 7, more than half (53%) of total parent or guardian do shopping via online, while remaining of them still prefer going to outlet or store for shopping.

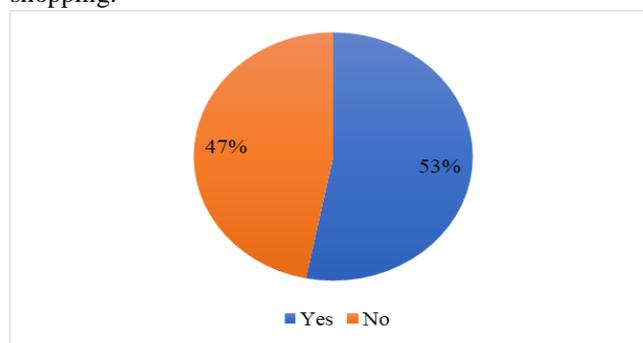


Fig 7: Children’s Clothes Purchasing via Online

The views from parent or guardian on shopping via online were collected through open-ended questions. The details are shown in Table 6. The positive finding is parallel with Wu & Tseng (2014) . They said that online shopping is an easy-shopping platform for busy people. Nonetheless, consumers taking risk in purchasing clothes online because they unable to try out the clothes to check the fit according to Nawi & Mamun (2014) which answered the opposite views of online shopping.

Table 6: Parent or Guardian views on Shopping via Online

Positive	Negative
Time saving; can shopping anywhere	Sizing and fit problems
More cheaper	Unknown the quality of clothes
Many choice and can compare clothes at any others online stores	Not trust on payment system
Avoid getting trapped by road congestion	Hassle waiting for exchange or return
Free return	Mislead information in website

Consumer satisfaction plays very important role in online shopping. Based on the Figure 8, fifty-eight parent or

guardian not satisfied with the clothes that they received. The justification on the satisfaction level stated was presented through open-ended questions. Almost all the parent or guardian said that the lower level of satisfaction was derived from sizing and fit problems.

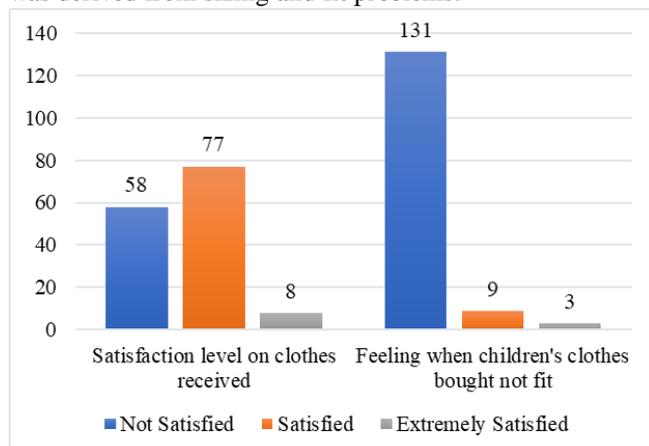


Fig 8: Satisfaction Level after Purchasing Children's Clothes via online

V. CONCLUSION

MATRADE's Lifestyle Director Mr. Abu Bakar Yusof during the Little Me Showcase, Malaysia External Trade Development Corporation (2016) said that the demand for global children's wear had been increasing steadily with a market value of approximately US\$157 billion. The high demand for children's clothing encourages more innovation of research.

This study was focusing on the exploration of perception on sizing and fit of clothing for Malaysian children by parent and guardian. The multi-racial samples with different genders, ages, total household income and area of residence are very important characteristics that must be considered to ensure the responses received will reflect the truth perception of parent or guardian on children's clothes especially in sizing and fit issues. The ANOVA test revealed that only higher income households had greater discrepancies with respect to expectation and satisfaction level items than lower income parent or guardian. The result was interpreted by the p-value is equal to 0.007 which was smaller than 0.05 significant different and null hypothesis has been rejected.

Parent or guardian expectations on specific criteria evaluations of body that contribute to the best fitting of children's clothes has been identified. Girth and length were used in measuring key dimensions which were height and bust for upper body and height and waist girth for lower body. Parent and guardian were opined that the suitable measurements of the key dimensions will be resulted good sizing and fit children clothing.

Malaysia is ranked as 31th world most technology ready countries driving towards revolution 4.0. With the 146% internet penetration and 7 million Malaysian population is actively shopping via online (Rahim, 2017). Parent or guardian requires a simple, intuitive and accurate illustration of size and fit for purchasing children's clothes

through online.

Different sizing system or standards among brands can also lead to consumer confusion in clothing selection. This could lead to consumer dissatisfaction. The dissatisfaction resulted retailers' loss for consumers to competitors, leading to negative word of mouth and returning will create hassle for consumers and a costly nightmare for retailers.

Based on the observation done into 10 top online kids and baby store in Malaysia, currently, most of clothing manufacturers in Malaysia have used European such as UK and US or Asian such as China and Taiwan standard sizing systems as a guideline for children clothes selection. The absent of Malaysian children's clothes sizing system creates a big vacuum for retailers or manufacturers of children clothing. It is proposed that the solution for the children's sizing and fit issues should be identified by introducing a new empirically derived Malaysia children clothing sizing system. The new standard children's sizing system will help entrepreneurs and vocational institution trainers on tailoring business by reducing consumer problems related to sizing and fit issues.

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