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Consumer Perception and Purchase Intention Towards Ergonomic Footwear

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ABSTRACT

A specific style of shoe called ergonomic footwear is made for consumers to treat foot issues. Ergonomic footwear is being created to fill the void in Malaysia as awareness of foot health grows. This study examined consumers' purchase intentions for ergonomic footwear using the Theory of Planned Behaviour and Expectancy-Value Theory.

Between June and July 2018, 221 replies to a survey questionnaire were gathered. This study discovered a significant positive association between purchase intention and utilitarian consumption, consumer perceived value, and perceived trust. Meanwhile, word-of-mouth research reveals a negligible correlation between purchasing intention. Word-of-mouth is not as significant as it once was, maybe as a result of the negative word-of-mouth conveyed by seasoned customers and/or the decreased tendency of consumers to rely on word-of-mouth.

One of the body's key contributors to health, particularly in diabetics, is the foot. Any incentive in the shoe could create strain on the gait parameters since throughout the day, a lot of pressure is passed through the legs to the knee, pelvis, and spine.
feel comfortable Shoes should be designed so that people with diabetes can wear them after work without developing neuropathy or ulcers and still enough.

In this study, 5 shoe styles that are marketed as medical shoes were chosen and contrasted with high-quality ergonomic indications. In the second stage, the impact of wearing these shoes for an extended period of time was assessed, along with the person's comfort level in their knees and foot soles.

A suitable insole to prevent the occurrence of musculoskeletal disorders in the lumbar region, the right fabric for ventilation of the foot area, and consideration of the appropriate anthropometric measurements in the toe area were all added to the one shoe that had relatively good conditions for people with diabetes.
Based on ergonomics, the design elements of the shoes for pregnant women were examined. First, a three-dimensional foot measuring device was used to measure the foot in accordance with a group of pregnant women's feet's features. Data on pregnant women's feet were then gathered, analysed, and utilised to develop shoes. In order to compare the situation of pregnant women's shoes in China and abroad, identify issues with pregnant women's shoe design, and provide solutions, the market for shoes for pregnant women was surveyed and analysed. Finally, a set of procedures for measuring the comfort of pregnant women were developed, the sample of pregnant women's shoes were constructed and made, and the best plan for pregnant women was determined by wearing tests of pregnant women's shoes.
Hospital Healthcare Workers (HHCW) frequently perform everyday responsibilities while standing, sitting, or in various full body positions for the whole of their 8+ hour shifts. A greater emphasis has been placed on hospital

healthcare staff during the coronavirus epidemic. Some employees have had to deal with larger patient numbers requiring intense care, longer hours for support staff, and more time spent standing up. Healthcare workers' capacity to deliver care, carry out daily tasks, and maintain their own personal health depends critically on the footwear they choose. Long durations of standing, sitting, or overexertion while walking can cause a variety of health problems, including back discomfort, injury, and persistent foot pain.

To provide hospital healthcare staff with stylish, functional footwear that is also ergonomically sound, it is crucial to comprehend and put best practises into practise. The research survey was created and given to hospital healthcare staff in order to best determine where additional research is required to address problems and fill in any gaps in the body of knowledge that are currently absent or insufficient.

The survey's findings are intended to identify research gaps in occupational footwear selection criteria, designs, and materials for health care workers, as well as to identify any unmet footwear needs and assess the typical load-bearing ergonomic working conditions for hospital healthcare staff.

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With the help of the survey's findings, deliberate material and design options may be offered to meet the needs and preferences of different healthcare workers and their footwear, while also guiding further research into and improvements to footwear for the healthcare sector. One of the major and late complications of this condition, diabetic foot syndrome is the primary reason for hospitalisation and impairment in patients with diabetes and accounts for between 58% and 50% of non-Comfort Congress 2021 Proceedings.
footwear advancements with ergonomic designs for diabetic feet lower extremity amputations caused by trauma. Therefore, it can be crucial for these individuals to wear the appropriate footwear that can protect their feet from any harm even over an extended period of time.

CHAPTER . 1

INTRODUCTION

The foot has long been referred to as the second human heart because it not only transmits pressure-induced reactions to the ground but also plays a crucial part in putting an even, balanced pressure on the joints and upper treatment parts to create the right position. The foot's environment changes as we age, become pregnant, gain weight, and experience daily stress. These things contribute to the foot becoming flat.

Almost all causes of foot discomfort can be divided into three categories: bad footwear, certain illnesses, and strenuous exercise. Above all, chronic illnesses like diabetes can eventually wreak havoc on the legs by causing pain and blisters. Typically, 15% of people with diabetes develop diabetic foot ulcers. One of the most common diseases and causes of death is diabetic foot ulcers.

An excellent shoe adapts to the terrain without placing strain on the foot and provides adequate foot coverage. One of the most important requirements to preserve people's health is the careful selection of shoes and adherence to standard principles in its creation. In patients with conditions including arthritis, diabetes, and peripheral vascular disease, prescribing and modifying shoes is a highly helpful tool for protecting the joint, reducing skin issues, and boosting optimal performance. The treatment of structural and functional issues linked to foot ailments is somewhat diminished by the use of medical shoes.

Medical shoes are not required for those with healthy feet. Depending on the sort of correction necessary, the shoes may be made of different materials and have a variety of patterns and heights. It's similar to ordering customised medicine to order each person's medical shoes. Medical shoe standards are established by the patient's ailment and deformity, as well as the intended use of the treatment. The purpose of this study was to assess and develop diabetic-friendly ergonomic shoes.

The shape of a typical pregnant woman does not alter during the first three months of pregnancy, but by the third month, both the uterus and weight have increased. Pregnant women's centres of gravity and abdomens lordedosed under the increasing pressure, making it difficult for them to walk. In late pregnancy, the foetal is larger and the abdomen protrudes forward, shifting the body's centre of gravity forward. Pregnant women frequently walk with their bodies in an unbalanced position after the dump, which causes back pain, edoema on the surface of the lower limbs and feet, and difficulties walking .

We need to improve the entire design of pregnant women, with the major goal of the design being to adjust the gravity of pregnant women in order to minimise the physiological phenomena of weariness. This includes the swelling of the feet, as well as the change in shape and walking position of pregnant women. According to the phenomena of a significant form change in pregnant women at various stages of pregnancy, shoes for pregnant women should be classified into those for early pregnancy (0–6 months) and late pregnancy (7-9 months). Last but not least, it is important to keep in mind that pregnant women's shoes should be designed with both comfort and protection for the wearer and the foetus in mind.

About 80% of persons have foot pain, according to a survey done by the American Podiatric Medical Association (APMA, 2014). However, just 30% of them seek professional medical attention. The population of Malaysia suffers

from mild to severe pronation and supination of the feet in 88% of cases, while leg length discrepancy affects 90% of cases. As a result, clients choose ergonomic footwear according to the current market trend .

The oldest industrial sector in Malaysia is the footwear industry, which produces over 70 million pairs of shoes each year (Ruixia & Chein, 2019). In Asia's footwear market, Malaysia ranks as the 13th-largest significant player (Italian Trade Agency 2012; MATRADE, 2015). According to MATRADE, the footwear industry has enormous growth potential for the market since it may raise awareness of footwear by creating stylish, comfortable shoes.

Malaysians made up 3.4% of the garment and footwear sector in 2016 (DOSM, 2017). However, the value of sales for footwear, leather, wearing clothes, and textiles in the third quarter of 2018 was 4.7% and 3.2% in the following quarter. In the final quarter of 2018, it revealed a decline of 1.2%. When sales in Malaysia's footwear market fell in 2018 (DOSM, 2019), a problem developed. The factors that influence customers' purchasing intentions for ergonomic footwear in Malaysia must be identified if the footwear industry is to improve sales.
Additionally, past clinical investigations show a connection between the foot problem and individuals with rheumatoid arthritis and diabetes (Arts et al., 2014; Stolt, Suhonen, & Leino-Kilpi, 2017). In the healthcare sector, previous research have shown a favourable correlation between consumer perceived value, perceived trust, and purchase intention. There aren't many options for foot health products, though. Additionally, consumers rely on word-of-mouth to buy health items, but in Malaysia, awareness of foot health is still very low. However, there aren't many research that concentrate on foot problems in the non-diabetic population and attitudes in Malaysia regarding ergonomic footwear. Therefore, it is crucial to identify the variables influencing Malaysian customers' perceptions of and intentions to purchase ergonomic footwear.

The goal of this study is to examine the connections between consumption for utility, consumer perception of value, word-of-mouth advertising, and consumer purchase intention for ergonomic footwear among non-diabetic customers in Malaysia. This study offers fresh insights into non-diabetic consumers in Malaysia's buying habits for ergonomic footwear. It offers policymakers insights to help them plan their actions in a way that will increase the level of consumption of ergonomic footwear.

Pregnancy-appropriate ergonomics and shoe upper designs :
It is preferable to select shoes that are simple to take off, and an excellent option is a shoe that covers everything. Although the Asakuchi shoe type is very easy to take off, it is difficult to hold the feet in place, therefore pregnant ladies must make extra effort to put the shoes on. Additionally, this type's ankle protection function is rather weak, it is simple to twist one's feet, and it may result in an early abortion or a premature birth at a later stage of pregnancy. Therefore, it is best to avoid thinking about this model when pregnant. The trip and elastic band are easy to remove, but so are their extension performances.

Pregnant women's shoes with ergonomic heels :
Cone-shaped shoes with little ground contact cannot be worn, while slope designs with excessive ground contact should also not be chosen when wearing shoes with wide heels to support the body. To strengthen the strength of the stride, the assembly heel type should be employed; use a root or wedge-shaped design. This will prevent heavy weight from pressing against the arch, which will improve stability. Early in the pregnancy, pregnant women should wear shoes with 15 to 30mm heels to help move the pregnant woman's centre of gravity forward. The latter, however Pregnancy, it was decided to create relatively short heels, or even near to flat-bottomed design, of 10mm typically, which can make the gravity centre backwards, so that pregnant women can walk easily .

Pregnancy-related footwear's ergonomics and colour scheme :
Pregnant women's shoes are coloured to emphasise shape while also taking into mind the practical aspects of the human body, shoes, and other items. As for various seasons, warm green, pink, yellow, and other colours can be utilised for pregnant women's spring shoes to create a fresh atmosphere of warm apparel, enhancing the range of colours. Pregnant women's summer shoes should, first and foremost, make people feel cool and comfortable, thus bright colours like white, blue, purple, and yellow should be used so that individuals wearing them appear to be wearing light clothing. Pregnant women's winter shoes shouldn't be that shallow or blue in colour.

The function and ergonomics of pregnant women's shoes :
The breathable layer of super-elastic fibres can be placed between the upper and upper lining in order to address the issue of pregnant women's feet swelling. This layer will automatically adjust to fit the pregnant women's feet's shape, allowing them to wear the shoes during any stage of pre-, medium-, or late pregnancy. A layer of cotton cloth can be added in the position of the instep lining and around the area, which will be both more breathable and sweat-absorbent, and this design is suitable for pregnant women's daily sweat gland secretion and feet edoema. The shell fabric must be certain materials with health properties, such as the choice of leather or fabric.
preventing athlete's foot illness from occurring and preventing perspiration from remaining on the feet. For the purposes of ventilation and non-slip, insoles can be doubled by adhering a breathable, non-slip insole on top of an insole with ventilation holes, while also enlarging a pair of breathable insoles inside to support the arch, lessen vibration, and lessen wear and tear.
Pregnancy-friendly footwear's ergonomics and sole design :

Pregnant women's shoes have a broader outsole than regular women's shoes, and they have an anti-slip and wear-resistant sole pattern. The shoes discussed in this article have EVA soles, which are thin and non-slip. Additionally, the sole weight should be minimal.

The design and substance of shoes for expectant ladies :
When choosing a material for women's shoes, pregnant women should first consider the softness, form, and quality of the leather. Natural leather has relatively good health features. Pregnant ladies should choose soft, high-quality leather or goatskin for their mid-range shoes, and high-quality calfskin is their first option for their high-grade footwear.

Pregnant women's mid-range shoes will be lined with first-layer pig skin, which has excellent breathability properties and a reasonable price, while their high-end shoes will be lined with goat skin.
For the sole, you can use polyurethane or TPR that is lightweight and has anti-skid properties. A specific soft to successfully prevent post-natal spine pain, EVA material can be utilised to reduce weight, for decompression and dampening, in conjunction with the best huge solid 20 mm high heels.
Useful colours include dark, frigid shades of green that provide a constriction effect. In order to avoid being overly dull, we can also choose a warm light tan, brown series, or colour in a wide area using a tiny colour for decorative purposes. We can also use decorative buttons and decorative pieces to the lovely colours to complement the overall feel.

CHAPTER-2

LITERATURE REVIEW

According to Ajzen (1985), the Theory of Planned Behaviour describes individual activity as conforming to a goal-oriented and well-formulated purpose. In this study, the Expectancy-Value Theory was applied, which describes a person who has a stronger desire to achieve a particular result and who exhibits a strong reaction in a scenario that is under their control (Ajzen, 1991). Both theories for analysing human behaviour and the decision-making process with regard to safety and health are used in this study .

According to this study, customers' intentions to buy ergonomic footwear are associated with agreeable quality, value, trust, and testimonials from happy customers, which are linked to customer behaviour and action. The advertisement of a particular brand of goods shapes consumers' intentions to buy (Ahmad, Idris, Mason & Chow, 2019). Repurchase intent is included in purchase intent. Likewise, the theory Purchase intent is strongly correlated with the likelihood of planned activity (Ajzen, 1991; Jing et al., 2019; Lim & Goh, 2019; Salem & Salem, 2018; Wang, et al., 2018; Zhang, et al., 2018). After clients have experiential benefits from the same resellers, repurchase behaviour happens (Patterson & Spreng, 1997; Nieto, Hernandez-Maestro & Munoz-Gallego, 2014). Finally, no purchasing intention will ever result in a successful buying procedure (Ladhari, Souiden, & Dufour, 2017) .

Additionally, customers' purchasing intentions vary depending on the product category; generally speaking, they are more likely to buy new products than old ones (Lim, 2017). Additionally, customers who adopt information make purchases based on the messages that salespeople and word-of-mouth promote (Baker, Donthu, & Kumar, 2016). A utilitarian action is one that encourages a person to meet their actual or basic requirements (Chang, Chen, & Lan, 2013). According to Ladhari, Souiden, and Dufour (2017), customers have positive utilitarian responses to receiving pleasant, high-quality service. According to Voss, Spangenberg, and Grohmann (2003), consumers respond differentially to various product categories in high-low utilitarian dimensions. Consumer perceived value is the consumer's assessment of the deservingness of the gifts and services received (Zeithaml, 1998). It is also known as the link between benefits obtained and the cost incurred, where a higher cost equates to a better level of quality (Imkamp, 2018). The act of passing knowledge from one person to another is known as word of mouth . The information is initiated based on customer experience and serves as a point of reference for the new user (Nieto, Hernandez-Maestro, & Munoz-Gallego, 2014). Word-of-mouth is employed as a source of relevant information in a pre-purchase buying decision, particularly in the healthcare industry. The readiness to rely on the trustee's actions is a result of perceived trust between the trustor and the trustee. Additionally, if the trustee did not deliver as promised, it refers to the confidence level of the trustor based on the "give and take" action. According to Thom, Hall, and Pawlson (2004), perceived trust and perceived service quality are related. According to Parasuraman, Berry, and Zeithaml (1991), it shows how the service met the customer's expectations.

The hypotheses in this study were created on the basis of the earlier studies. Consumer purchase intentions for ergonomic footwear are the dependent variable, whereas utilitarian consumption, consumer perceptions of value, word-of-mouth recommendations, and perceived trust are the independent factors. Customers' expectations of receiving thorough foot care and footwear that provides wearers with symbolic meaning will directly influence their intention to purchase ergonomic footwear. According to prior research, utilitarian consumption is a significant factor in the decision to buy a health-related product (Vieira, Santini, & Araujo, 2018). The relationship between consumer purchase intent and utilitarian consumption is therefore developed, as seen below.

H1: The intention to purchase ergonomic footwear is positively correlated with utilitarian consumption.
A different amount of foot pain results in a different level of outcome in terms of consumer perceived value, and ergonomic footwear is directly tied to medical therapy. Perceived value had a significant effect on customer purchase intention, particularly in the retail environment and the footwear sector. The value of a customer's purchase is related to the requirement for foot healing. Consumer intention to purchase a health-related product is significantly influenced by consumer purchasing value (Roudposhti et al., 2018; Yu & Lee, 2019; Sweeney & Soutar, 2001). This leads to the development of the following theory regarding customer buying intention.

H2: Consumer purchase value and buy intention for ergonomic footwear have a favourable link.
To satisfy customer demand for a comfortable shoe-wearing experience, ergonomic footwear combines podiatrist services with biomechanical engineering principles. In the highly specialised health sector, recommendations through word-of-mouth are crucial. Consumer purchase intention is correlated with word-of-mouth in the pre-buy scenario (Baker, Donthu, & Kumar, 2016; Nieto, Hernandez-Maestro, & Munoz-Gallego, 2014). In particular, it offers clients a way to search for information about the usage and operation of unidentified products. A word's quality and content will typically influence a consumer's intention to buy. An essential factor in determining a consumer's inclination to buy a health-related product is word-of-mouth advertising. The relationship between customer purchase intent and word-of-mouth advertising is thus developed.

H3: Word-of-mouth advertising and ergonomic footwear purchase intent are positively correlated.
Building trust includes the level of service that results from operating and offering treatment guidance. Customers that receive personalised involvement are more likely to make purchases. Previous research (Rachbini, 2018; Thom, Hall, & Pawlson, 2004) demonstrated that perceived service quality affected consumers' perceptions of a brand while perceived business trust influenced consumers' intention to make a purchase. Similar to this, a customer's perception of a brand and the calibre of its services influences their choice to make a purchase. The relationship between consumer purchase intent and buy trust is therefore created, as seen below.

H4: The perception of trust is positively correlated with the intention to buy ergonomic footwear .

Pain is known to come before discomfort. Pain, like comfort, has a variety of meanings (Liebeskind and Paul, 1977). Pain contains characteristics of a feeling, but its typical ability to make us uncomfortable or suffer distinguishes it from other sensations, according to the National Science Foundation Research Briefing on Pain and Pain Management (Perl, 1985). According to Merskey (1986), pain is "a painful sensory and emotional experience related to actual or potential tissue damage, or described in terms of such damage." It is widely acknowledged that pain is a distinct feeling, the severity of which is inversely correlated with the possibility for tissue damage (Melzack, 1986). Though pain may continue long after tissue damage, it need not always be related to it.

Using the programme Design Expert, experimental design was carried out. There were 324 classes when all conceivable variations were taken into account, but when the primary effects criteria were applied, only twelve classes remained. One alternative was deemed to be out of season, three of them are impossible combinations, and they are not commercially accessible. The total number of options was whittled down to a final set of eight classes.

We took into account three variables that affected shoe fit while addressing the issue of shoe structure design: activity, user profile, and style [14]. These traits influence the final shoe specifications that best suit each consumer, which results in various fitting guidelines. In order to facilitate specialised research on various footwear groups (casual ladies' shoes, casual men's shoes, running shoes, etc.), we initially categorised the shoes based on these three criteria. Young women's spring and summer casual shoes with heels less than 30 mm were the category of footwear we chose for our investigation.
We exploited this variation to build our various classes because the final shoe fit is determined by a number of design factors.
First, we examined .

The technique was made to be used in shops that offer several brands and rotate their inventories seasonally. It would have been challenging to add shoe last geometry data into our model given this situation (interbrand competition and necessity for data protection). Therefore, one of our goals was to create a best-fit system that would not require the usage of shoe last information during the assignation of customers to pairs of shoes. The methodology and analysis were built on a preliminary classification of the shoes as the chosen approach to the problem. Each class was created to reflect a type of footwear that has remained constant across time and is distinguished by specific utilitarian characteristics. By allocating new collections, new ones are added to the system.

Toe cup: The primary changes in fashion that have an impact on the previous design are generally related to toe shape. This matters because it has an impact on how the toe area appears to fit. As a result, we identified three different toe shape categories: squared, rounded, and pointed.

• Upper flexibility: The key aspect affecting how a shoe conforms to the shape of the foot is the rigidity of the upper. Accordingly, we identified three stiffness levels: low, medium, and high. According to a database of characterised materials, the level of rigidity was determined, taking into account the kind, quality, and thickness of the upper material.
• fastening adjustments: The degree of adjustment offered by the shoe fastening is another critical element in determining how well shoes fit.

A fastener with a high amount of adjustment allows for a wider range of foot shapes and creates the impression of a more comfortable fit at the instep. In addition to the low (elastic fastener), medium (strap and belt), high (laces), and additional levels for bumps without an upper covering the instep region, we specified four levels of fastener adjustment.
• Sole: High sole rigidity makes the sole design a crucial factor when considering dynamic fit.

Given that comfort level and pain summation are associated, we used the two variables to determine the cutoff between a good fit and dissatisfaction. Even while these factors can be combined to generate an acceptable degree of comfort, some subjects will still report significant pain at this level of comfort, making it an inappropriate measure of happiness. In order to merge the comfort and pain summation variables, we constructed a new variable (the categorization variable). In order to be labelled a bad fit (perceived dissatisfaction), a comfort level greater than 3 (which is worse than "comfortable") and a summation of pain larger than 5 (percentile 75 when comfort is equal to 3), were required.
The reverse took place.

An accuracy rate of about 65.7% was obtained using statistical fit models created from user data (user preferences and foot anthropometric measurements) and a shared specification of the classification variable for the eight classes.

This level of precision is a little less than that attained by Witana et al. [4], whose methodology was based on analysing the geometric variations between the last and subjective fit ratings and the bottom 2D contours of the foot.
Our results' more in-depth study reveals that classes 4 and 6 had the lowest accuracy rates. The fact that both of these groups resulted in the least amount of discomfort shows that, in order to increase the precision of the fit prediction, an alternative definition of the variable should be employed.

It made sense that the subjective data statistics would change from class to class as we had designed our classes using five characteristics that can affect comfort in various ways. Most of the time, people felt that certain shoes were comfortable, while other shoes caused more pain. As a result, it can be said that each class has a unique link between subjective data and that each class also has a unique set of standards for determining the threshold of best fit requirements.

The total amount of pain experienced at each degree of comfort for the various groups is depicted in Figure 7. The obtained patterns demonstrate that, depending on the type of shoe and amount of comfort, users experience varying degrees of pain.

The extreme situation of a pair of high-heeled shoes that produces a larger impression of ease than a casual shoe, despite an identical perception of pain, may help to explain this behaviour. The fact that consumers have varying amounts of expectations may help to explain this.

The derived logistic regression models for the eight classes confirm that fit preferences in addition to foot dimension affect final shoe comfort.
Despite the fact that our class-based approach did not produce a high level of accuracy, it is an innovative tool for investigating shoe fit concerns, especially given the possibility that research advances could enhance future prediction models. We suggest the following directions for additional study in this area .
It is necessary to do more research using fresh prototypes for each class in order to confirm its resilience and class structure as well as to enhance the effectiveness of prediction models.
• Fitting trials are quick assessments used to gauge users' impressions of fit. However, other factors that are more directly related to long-term comfort, such how pressure is distributed on the bottom of the foot or how well a shoe absorbs weight and shock, may also have an impact on overall subjective assessments. Additionally, in order to improve model accuracy, extra shoe attributes may perhaps be taken into account when constructing classes, as subjective evaluations are partly related to perceived comfort.
• Another option to enhance current techniques is to replace linear measures and girths with morphological variables that determine foot form characteristics.
This article covers the creation of a model that forecasts shoe fit using user data. The methodology involved creating a system for categorising various styles of footwear into classes based on their practical characteristics.
A 3D scanner was used to measure the foot dimensions of all 316 female participants, and each participant's personal preferences for overall shoe fit were entered into the system. To ascertain subjective judgements of the shoe classes, fitting trials were conducted.
The outcomes demonstrate a mean accuracy of almost 65.7% in the fitting level prediction utilising .

The foot contains the largest concentration of bone structure in the human body and is a sophisticated support structure made up of 26 bones. The foot's bones must accommodate ongoing fluctuations in load. All shoes should, in theory, fit comfortably in both length and width, grip the heel firmly, have a straight line from the heel to the end of the big toe to prevent the big toe from rotating, and have enough room for the toes.

To prevent the shoe from slipping on and off when walking, there should also be a method of securing over the top of the foot (Steemson 1988). The most common criticisms of were their clumsiness, weight, and lack of contact sensitivity.
firefighters frequently wear safety boots (Louhevaara, 1995; Mäkinen, 1991; Marr, 1990). Audemars (1978), Oakley (1984), De Moya (1982), and others have investigated the biomechanical features of footwear from the perspectives of inadequate fit, the necessity for shock absorption, and unrestricted mobility and ease of movement. Leather boots were proven to have advantages in laboratory tests with relation to biomechanical characteristics (Neevees et al., 1989). Male North American and Japanese or Korean forefoot shape and size disparities were compared by Hawes et al., who came to the conclusion that these two populations' forefoot shapes are different. Therefore, for the best shoe comfort, different shoe lasts are needed for each group (Hawes et al., 1994).

One crucial requirement of PPE Directive 89/686/EEC is ergonomics. So far few harmonised EN standards contain some ergonomic requirements. An EU Commission-funded study on fire fighters' protective footwear got underway last year. Clarifying fire fighters' understanding of their footwear demands is one of the goals of this initiative.
This study aims to determine how fire fighters perceive the biomechanical and ergonomic characteristics of their boots while doing va

CHAPTER – 3

Research Methodology

[I] . Sample Frame

315 participants were chosen as the sample in this study using an adequate sampling approach for gathering primary data. The students have a finite amount of time to access the entire research population when doing this survey. As a result, to complete the survey, the students choose a sample to represent the entire population .

[II] . Collection of Data

Both primary data and secondary data were used to inform this poll. Primary data gathered by disseminating a questionnaire to several groups of people in various locations. the secondary information gathered from books, articles, websites, journals, and other sources.

[III] . Data Analysis

315 feedback forms were utilised in the survey to collect data for this study's findings.
To assess the information gathered from the survey questionnaire, statistical analysis was performed.
These surveys' responses were turned into numerical data for analysis. Primary data gathered through surveys are evaluated using statistical techniques and graphics.

DESCRIPTION OF THE PROBLEM
The respondents for this study were Malaysian urban adults. It is used with urban adult consumers that are at least 21 years old and are interested in ergonomic footwear. The non-probability sampling strategy was used in this investigation. This study specifically employed the judgmental sampling methodology to obtain responses from customers . Respondents are assumed to be aware of foot issues, to have gone to health talks, and to be interested in ergonomic footwear. To ensure that the results acquired in this study are correct, their capacity for understanding and purchasing components is crucial.
The Partial Least Squares (PLS) method was used to analyse the data. 315 replies to a survey questionnaire were gathered. The primary objective of this study, which predominantly employed a quantitative method, was to look at the connections between utilitarian consumption, consumer perceptions of value, word-of-mouth recommendations, perceived trust, and customers' propensity to buy ergonomic shoes. The respondents were given a questionnaire with a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") for all the measurements. There were two sections to the questionnaire. Section B gauges consumers' opinions of the ergonomic footwear they have chosen, whereas Section A measures the demographic profile of respondents.

PURPOSE OF THE STUDY
The study is quite high and is based on a fairly narrow segment of the population. It is impossible to research every single item in a vast population. As a result, samples are chosen from the general population

315 persons are chosen as samples for the study, and information is gathered from them. given that the study is a sample. The study's reach is constrained. The facts are only briefly summarised here. Therefore, the study's results might not be entirely trustworthy .

OBJECTIVES OF STUDY

- To examine the perception of consumer towards purchase ergonomic footwear .
- Purchase intention to analyse the factors affecting the purchase of ergonomic footwear.
- compare the to demographic profile of consumer .

THE STUDY'S LIMITATIONS

These are the study's primary limitations:

• Because just 315 people were included in the study, the results might not be widely applicable.

• The information we gather from customers is qualitative in nature, meaning that things like perspectives, perceptions, satisfaction, and opinions could occasionally change.

• Time constraints prevented the presentation of a reasonable investigation involving other areas.

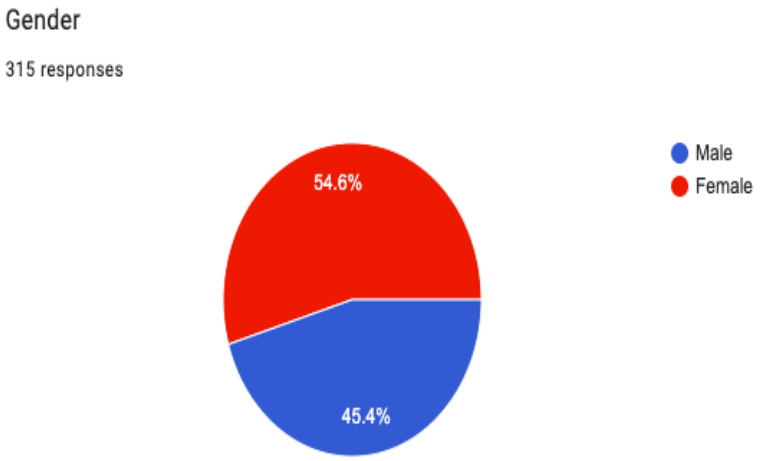
• The bias towards providing accurate information displayed by some persons.

CHAPTER – 4

Data analysis and interpretation

TABLE 1:

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
MALE	143	45.4%
FEMALE	172	54.6%
TOTAL	100	100%



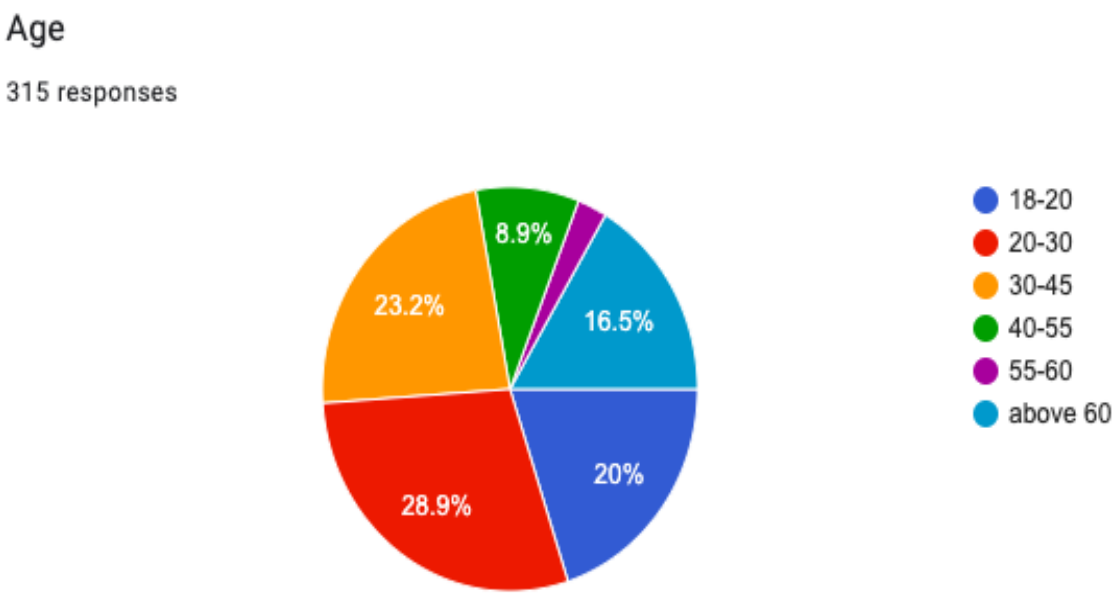
INTERPRETATION:

Gender-specific respondents for classification .

According to Table 1:- 45.4% of respondents are men and 54.6% are women are respondents for ergonomic footwear .

TABLE 2:

CATEGORY	NO OF RESPONDENTS	PERCENTAGE(%)
18-20	63	20%
20-30	91	28.9%
30-45	73	23.2%
40-55	28	8.9%
55-60	8	2.5%
ABOVE 60	52	16.5%



INTERPRETATION :

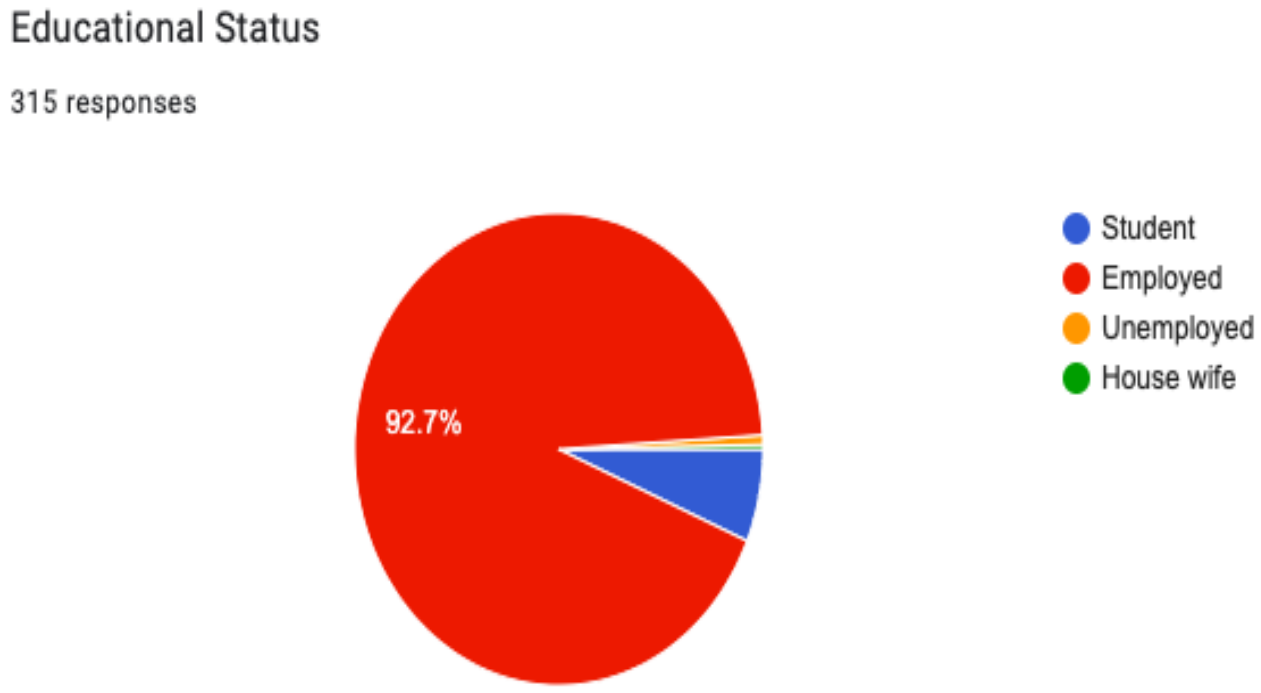
CLASSIFICATION OF RESPONDENTS BY AGE

According to table no 2 the age group 18-20 is 63 respondents 20% , 20-30 is 91 respondents 28.9% , 30-45 is 73 respondents 23.2% , 40-55 is 28 respondents 8.9% , 55-60 is 8 respondents 2.5% , above 60 is 52 respondents 16.5% .

TABLE NO 3 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE(%)
STUDENT	20	6.3%

EMPLOYED	292	92.7%
UNEMPLOYED	2	0.6%
HOUSE WIFE	1	0.3%



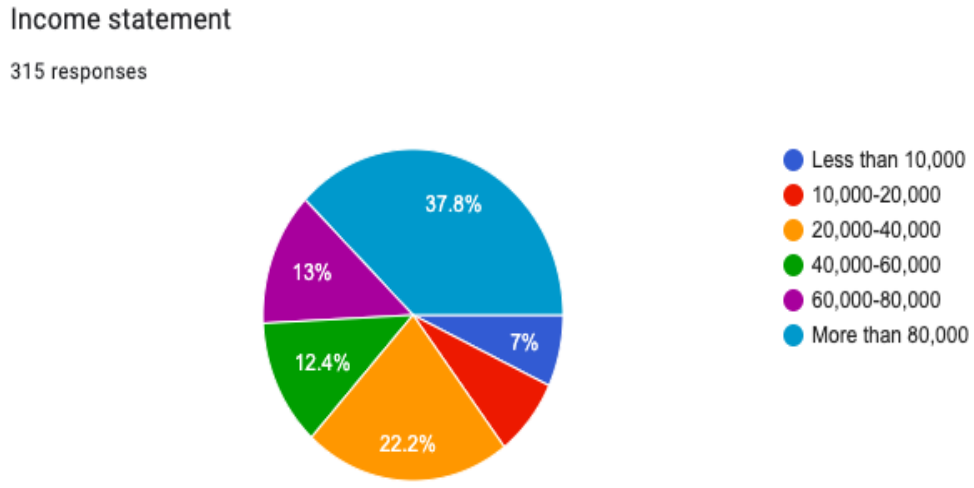
INTERPRETATION :

THE RESPONDENTS' EDUCATIONAL QUALIFICATIONS

According to table number 3 the educational qualification respondents are 20 students (6.3%) , 292 Employed (92.7%) , 2 Unemployed (0.6%) , 1House wife (0.3%) .

TABLE NO 4 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
10,000-20,000	22	7%
20,000-40,000	70	22.2%
40,000-60,000	39	12.4%
60,000-80,000	41	13%
MORE THAN 80,000	119	37.8%
LESS THAN 10,000	22	7%



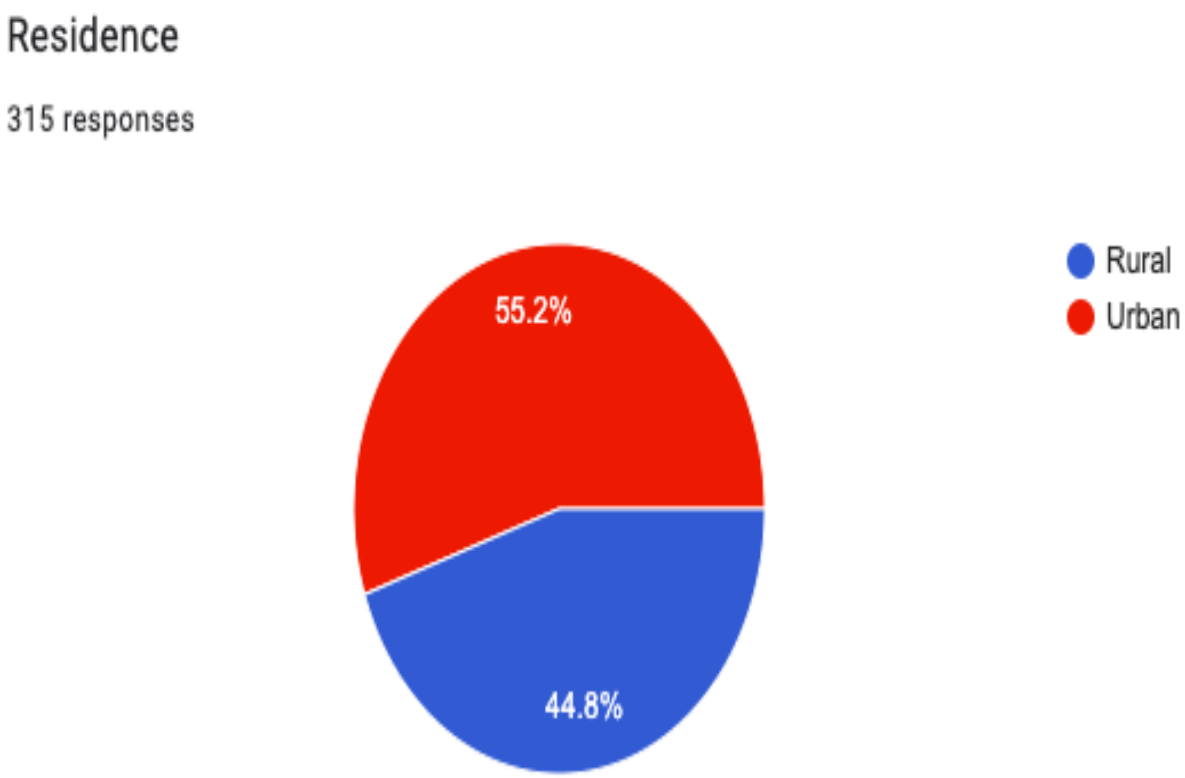
INTERPRETATION :

MONTHLY INCOME RESPONDENTS

According to table no 4 is monthly income data respondents of people are less than 10,000 income 22 people (7%) , 10,000-20,000 income 24 people (7.6%) , 20,000-40,000 income 70 people (22.2%) , 40,000-60,000 income 39 people (12.4) , 60,000-80,000 income 41 people (13%) , more than 80,000 income 119 people (37.8%) .

TABLE 5 -

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
URBAN	174	55.2%
RURAL	141	44.8%
TOTAL	315	100%



INTERPRETATION :

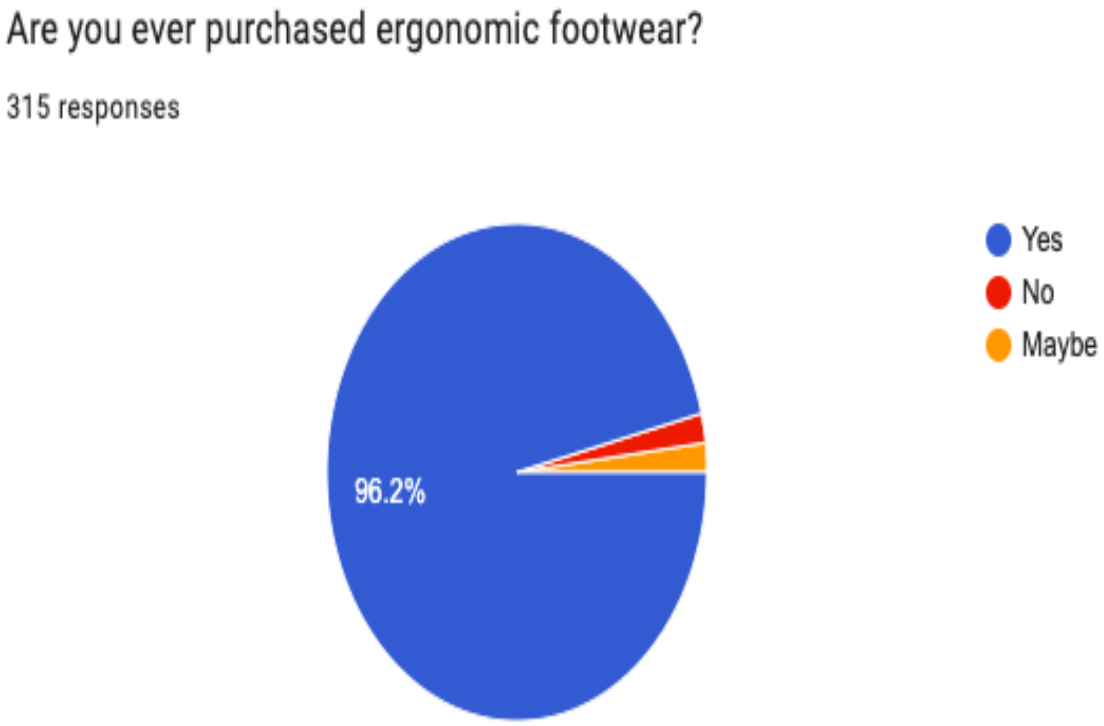
RESIDENCE LOCATIONS

According to Table 5, (55.2%)of respondents live in urban regions, whereas (44.8%) of respondents in the countryside.

TABLE NO 6 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
YES	303	96.2%
NO	6	1.9%

MAY BE	6	1.9%



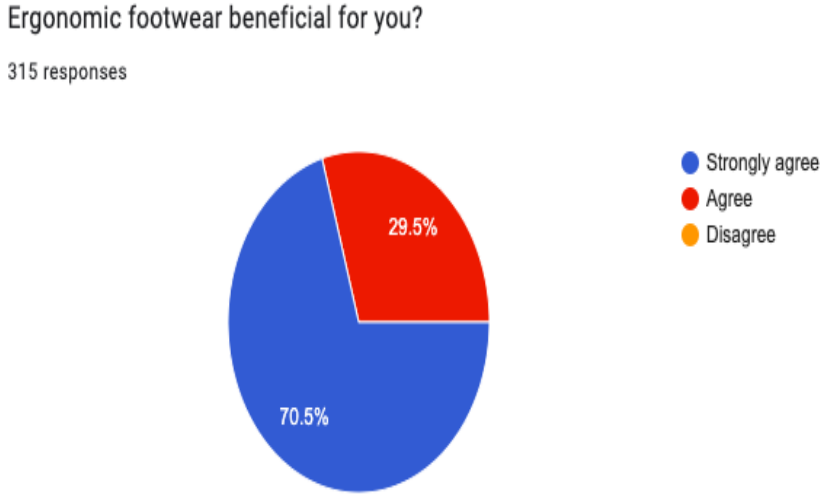
INTERPRETATION :

ERGONOMIC FOOTWEAR PURCHASED PEOPLE

In table no 6 , we got respondents 303 people (96.2%) purchase ergonomic footwear, not purchase ergonomic footwear 6 people (1.9%) and may be purchase 6 people (1.9%)ergonomic footwear .

TABLE NO 7 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
STRONGLY AGREE	222	70.5%
AGREE	93	29.5%
DISAGREE	0	0%



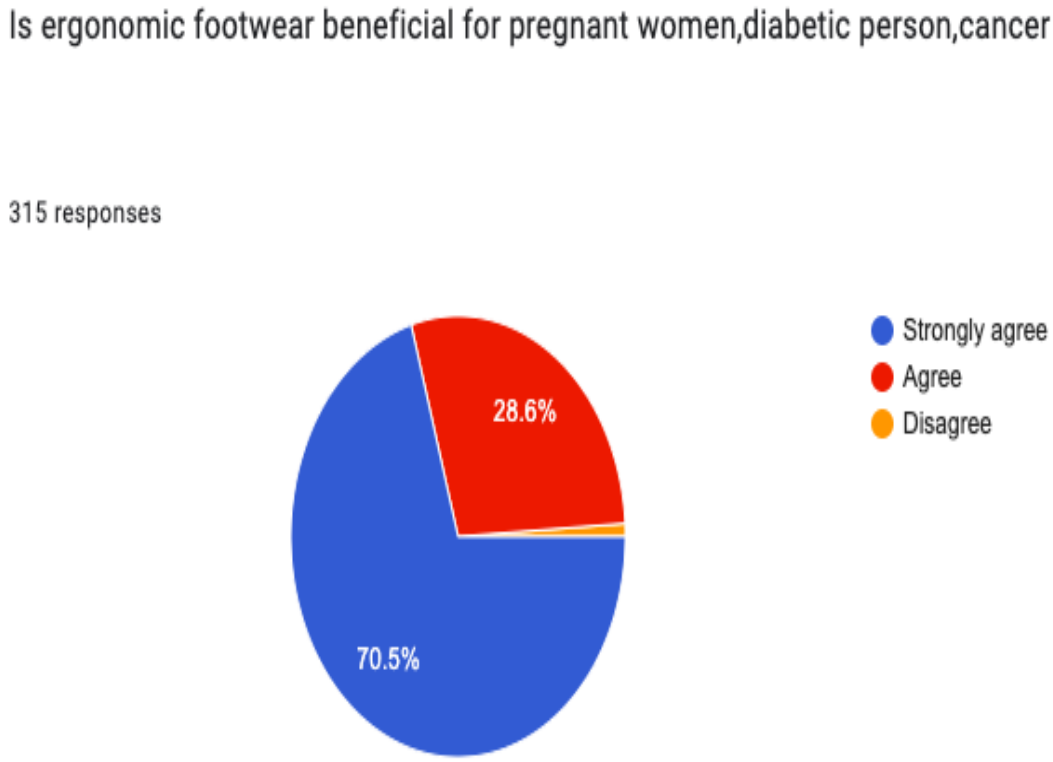
INTERPRETATION :

ERGONOMIC FOOTWEAR BENEFIT FOR PEOPLE .

In table no 7 shows ergonomic footwear beneficial respondents 222 people (70.5%) strongly agree, 93 people (29.5%) agree and 0 people (0%) disagree .

TABLE NO 8 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
STRONGLY AGREE	222	70.5%
AGREE	90	28.6%
DIS AGREE	3	1%

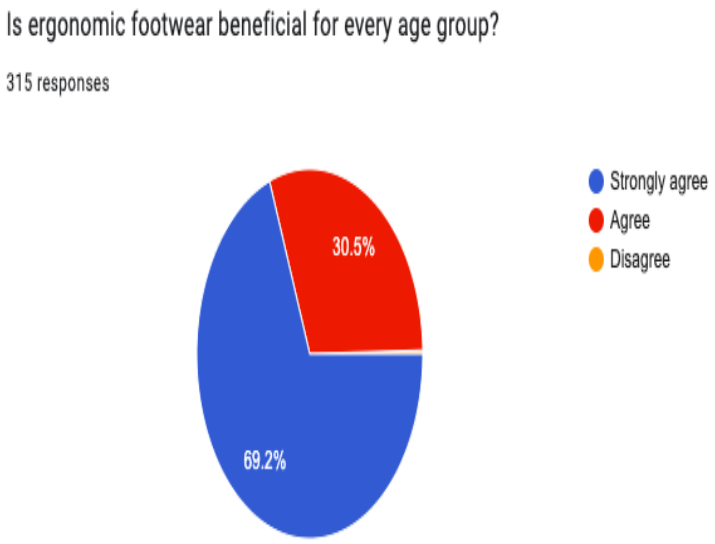


INTERPRETATION :
Pregnant women, diabetics, and cancer patients can all benefit from wearing ergonomic footwear.

Table no 8 shows ergonomic footwear beneficial for diabetic person, cancer patient , pregnant women respondents are 222 people (70.5%) strongly agree , 90 people (28.6%) agree, 3 people (1%) disagree .

TABLE NO 9 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
STRONGLY AGREE	218	69.2%
AGREE	96	30.5%
DIS AGREE	0	0%



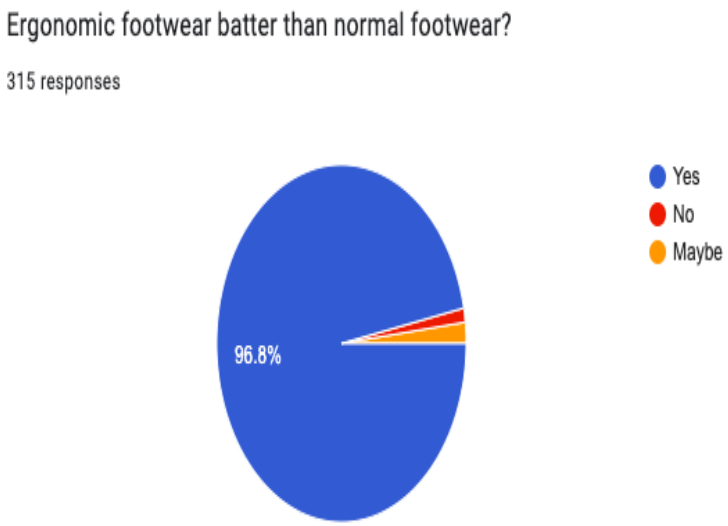
INTERPRETATION :

Ergonomic footwear that is comfortable for all ages .

According to table no 9 that ergonomic footwear beneficial for every age group respondents 218 people (69.2%) strongly agree, 96 people (30.5%) agree, 0 people (0%) disagree.

TABLE NO 10 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
YES	305	96.8%
NO	4	1.3%
MAY BE	6	1.9%



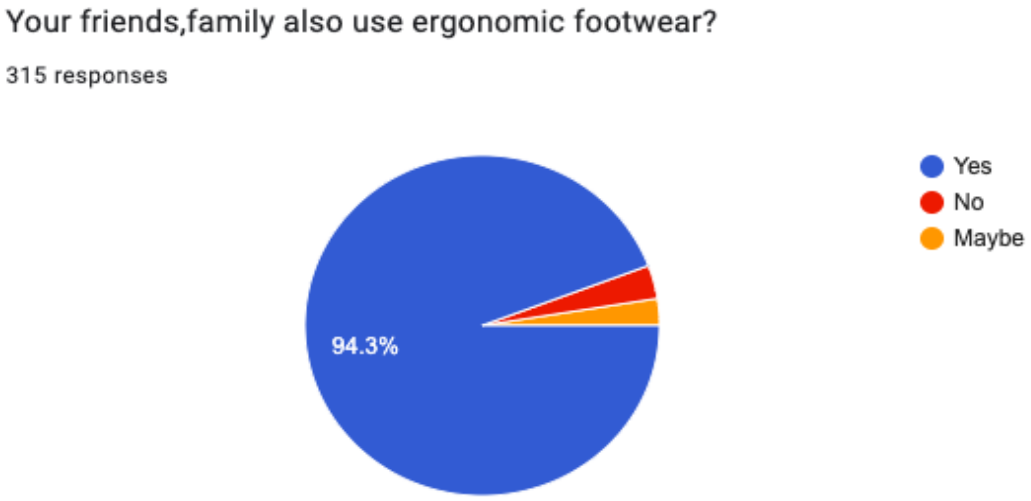
INTERPRETATION :

ERGONOMIC FOOTWEAR BATTER THAN NORMAL FOOTWEAR .

Table no 10 shows ergonomic footwear batter than normal footwear respondents 305 people (96.8%) yes opinion , 4 people (1.3%) no opinion , 6 people (1.9%) may be opinion .

TABLE NO 11 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
YES	297	94.3%
NO	10	3.2%
MAY BE	8	2.5%



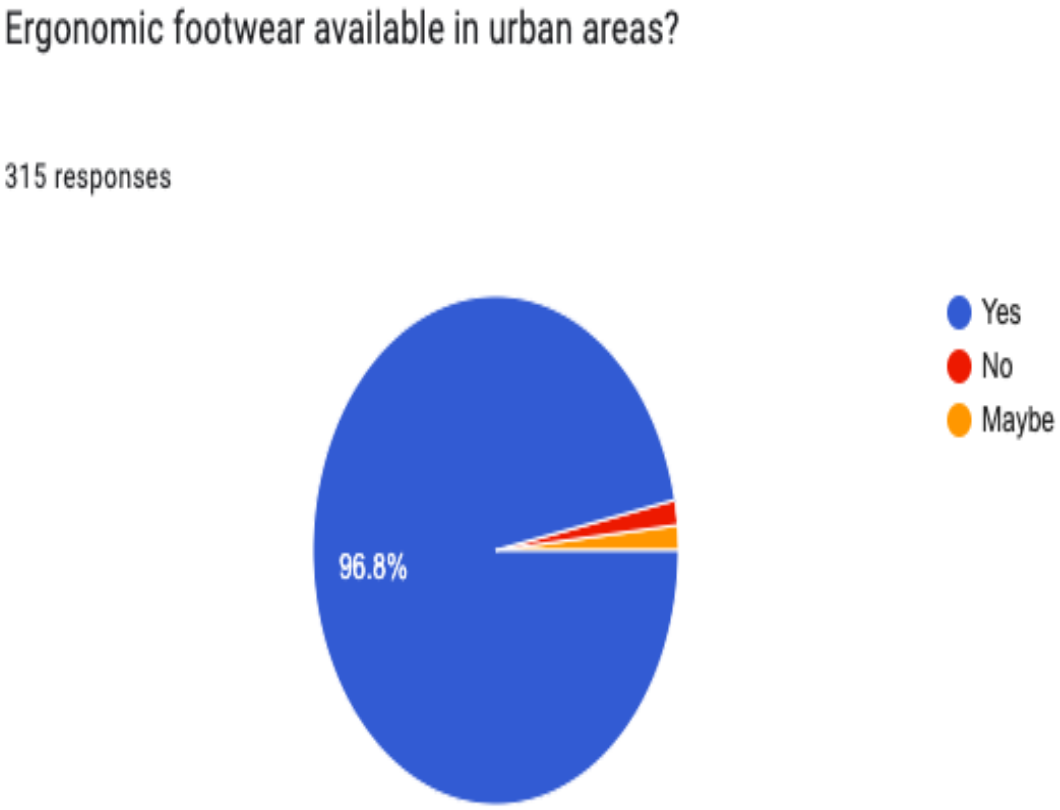
INTERPRETATION :

Your friends, family also use ergonomic footwear .

Table no 11 shows ergonomic footwear use by friends and family respondents 297 people (94.3%) opinion yes , 10 people (3.2%) opinion no , 8 people (2.5) opinion may be .

TABLE NO 12 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE(%)
YES	305	96.8%
NO	5	1.6%
MAY BE	5	1.6%



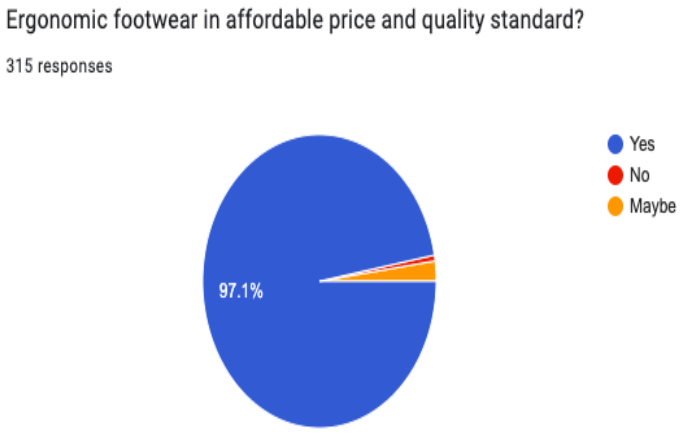
INTERPRETATION :

Table no 12 shows ergonomic footwear available in urban areas .

According to table no 12 respondents 305 people (96.8%) opinion yes , 5 people (1.6%) opinion no , 5 people (1.6%) opinion may be .

TABLE NO 13 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
YES	306	97%
NO	2	0.6%
MAY BE	7	2.2%



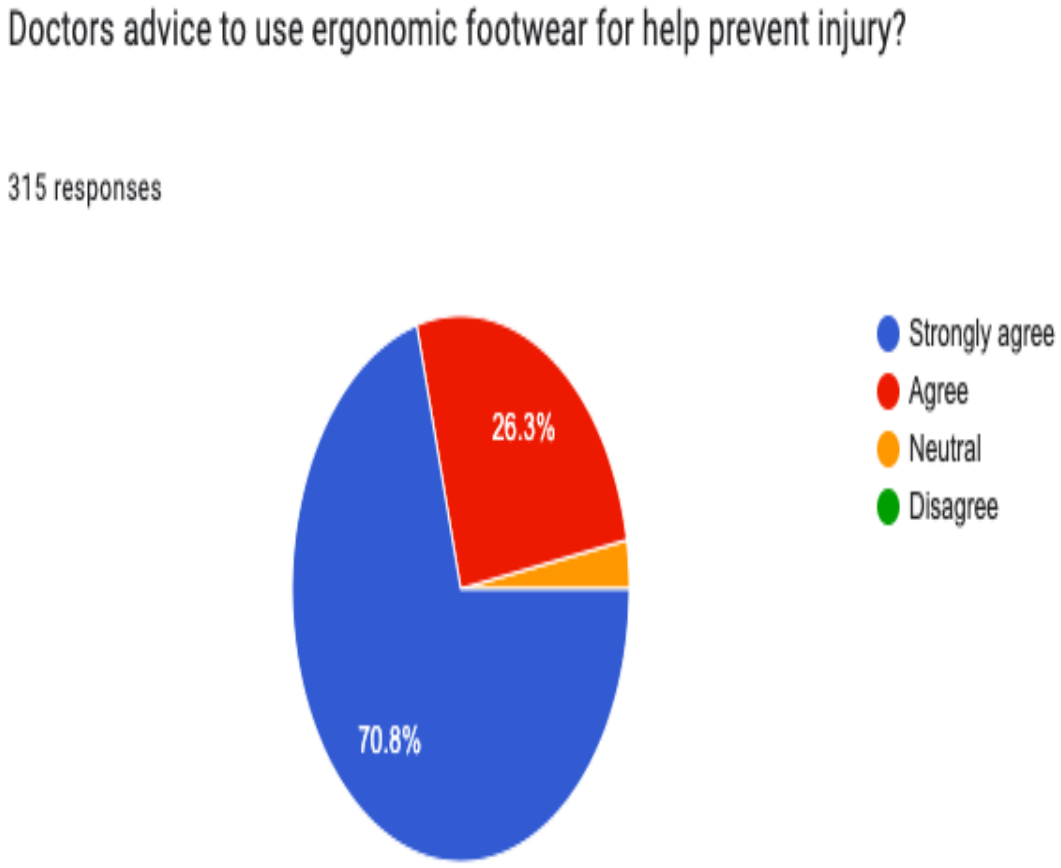
INTERPRETATION:

Ergonomic footwear in affordable price and quality standard .

According to table no 13 respondents 306 people (97.1%) agree with ergonomic footwear in affordable price and quality standard , 2 people (0.6%) opinion no , 7 people (2.2%) opinion maybe .

TABLE NO 14 :

CATEGORY	NO OF RESPONDENTS	PERCENTAGE (%)
STRONGLY AGREE	223	70.8%
AGREE	83	26.3%
NAUTRAL	9	2.9%
DISAGREE	0	0%



INTERPRETATION :

Doctors' advice to use ergonomic footwear for help prevent injury .

According to table no 14 respondents 223 people(70.8%) strongly agree , 83 people (26.3%) agree , 9 people (2.9%) neutral , 0 people (0%) disagree " Doctors advice to use ergonomic footwear for help prevent injury'' .

Factor Analysis

Correlation Matrix

		residence	gender	doctorsadvice	available	everyagebenefit	use	age	batterthan	beneficialpatient	incomesatatement	educationalstatus	purchased	affordable
Correlation	residence	1.000	.821	.679	.191	.705	.258	.683	.192	.719	.844	.249	.209	.185
	gender	.821	1.000	.558	.156	.578	.212	.738	.158	.590	.880	.298	.172	.152
	doctorsadvice	.679	.558	1.000	.527	.960	.590	.637	.533	.945	.631	.201	.544	.534
	available	.191	.156	.527	1.000	.391	.860	.226	.982	.265	.177	.134	.948	.948
	everyagebenefit	.705	.578	.960	.391	1.000	.447	.644	.385	.980	.655	.211	.403	.372
	use	.258	.212	.590	.860	.447	1.000	.306	.871	.359	.240	.129	.898	.870
	age	.683	.738	.637	.226	.644	.306	1.000	.228	.651	.885	.486	.248	.220
	batterthan	.192	.158	.533	.982	.385	.871	.228	1.000	.267	.179	.130	.965	.965
	beneficialpatient	.719	.590	.945	.265	.980	.359	.651	.267	1.000	.668	.189	.291	.258
	incomesatatement	.844	.880	.631	.177	.655	.240	.885	.179	.668	1.000	.538	.195	.172
	educationalstatus	.249	.298	.201	.134	.211	.129	.486	.130	.189	.538	1.000	.131	.125
	purchased	.209	.172	.544	.948	.403	.898	.248	.965	.291	.195	.131	1.000	.931
	affordable	.185	.152	.534	.948	.372	.870	.220	.965	.258	.172	.125	.931	1.000
Sig. (1-tailed)	residence		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	gender	.000		.000	.003	.000	.000	.000	.003	.000	.000	.000	.001	.003
	doctorsadvice	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	available	.000	.003	.000		.000	.000	.000	.000	.000	.001	.008	.000	.000
	everyagebenefit	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	use	.000	.000	.000	.000	.000		.000	.000	.000	.000	.011	.000	.000
	age	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	batterthan	.000	.003	.000	.000	.000	.000	.000		.000	.001	.011	.000	.000
	beneficialpatient	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	incomesatatement	.000	.000	.000	.001	.000	.000	.000	.001	.000		.000	.000	.001
	educationalstatus	.000	.000	.000	.008	.000	.011	.000	.011	.000	.000		.010	.013
	purchased	.000	.001	.000	.000	.000	.000	.000	.000	.000	.000	.010		.000
	affordable	.000	.003	.000	.000	.000	.000	.000	.000	.000	.001	.013	.000	

Factor Analysis :

A tool called factor analysis is employed to determine the underlying factors that are quantified by several observed variables. This technique for data minimization. Principal Components analysis was the technique used to extract factors from the analysis. The majority of respondents' responses were tallied using a five-point Likert scale.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.831
Bartlett's Test of Sphericity	Approx. Chi-Square	7643.104
	df	78
	Sig.	.000

Communalities

	Initial	Extraction
residence	1.000	.792
gender	1.000	.754
doctorsadvice	1.000	.945
available	1.000	.957
everyagebenefit	1.000	.923
use	1.000	.864
age	1.000	.819
batterthan	1.000	.975
beneficialpatient	1.000	.933
incomesatatement	1.000	.954
educationalstatus	1.000	.761
purchased	1.000	.955
affordable	1.000	.947

Extraction Method: Principal Component Analysis.

KMO ANALYSIS

In order to minimise the dimensionality of the twenty-two assertions and analyse and summarise the data in variables of a smaller set, a Correlation Matrix Factor Analysis was conducted. Each individual variable received a KMO statistic, and the total of those statistics is the KMO overall statistic. KMO can range from 0 to 1.0 or any amount higher.Although a score of 5 is regarded as satisfactory, a higher score is preferable.

In the event that it is not, it is necessary to stop using the indicator variables until the KMO statistic as a whole increases above.50. The idea is that if one expects unique factors to emerge via factor analysis, the partial correlations shouldn't be particularly strong.
In the correlation matrix, all diagonal values are 1 and all off-diagonal values are 0, which is the null hypothesis that no correlations exist between any of the variables, is tested using the Bartlett test of sphericity. There are relationships in the data, and since the null hypothesis was rejected by factor analysis can be used.
The variables' independence was also verified, and these figures were far over the minimum criterion. Some variables had to be eliminated during the process. With certainty that the data was suitable for factor analysis, it was then possible to move on with factor extraction. The factor analysis was used since the report compares .

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.974	53.647	53.647	6.974	53.647	53.647
2	3.456	26.585	80.232	3.456	26.585	80.232
3	1.149	8.836	89.068	1.149	8.836	89.068
4	.649	4.995	94.063			
5	.271	2.086	96.149			
6	.170	1.307	97.456			
7	.141	1.087	98.543			
8	.070	.541	99.084			
9	.044	.341	99.425			
10	.037	.286	99.711			
11	.020	.153	99.864			
12	.012	.095	99.959			
13	.005	.041	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
residence	.715	.527	-.058
gender	.661	.547	.134
doctorsadvice	.904	.145	-.326
available	.728	-.649	.075
everyagebenefit	.839	.296	-.363
use	.756	-.541	.017
age	.724	.484	.247
batterthan	.734	-.656	.075
beneficialpatient	.782	.403	-.399
incomesatatement	.731	.589	.270
educationalstatus	.352	.247	.759
purchased	.743	-.632	.063
affordable	.721	-.650	.071

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Frequencies

Statistics

		gender	age	affordable	residence	doctorsadvice	available	incomesatatement	use	educationalstatus	purchased	beneficialpatient	everyageben efit	batterthan
N	Valid	315	315	315	315	315	315	315	315	315	315	315	315	315
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERPRETATION

To find and keep those elements that are essential for accurately reproducing the initial correlation matrix, factor extraction was performed. Only factors with eigenvalues at or above the mean eigenvalue should be used. The variance in all the variables that are accounted for by a specific factor is measured by its eigen value. Accordingly, eigen values represent the proportion of variation in the entire sample that is explained by each factor. The total of a factor's squared factor loadings for all the variables can be used to calculate a factor's eigenvalue. The explanatory relevance of the factors with regard to the variables is expressed as a ratio of the Eigen values. When a factor's Eigen value is low .

We have retrieved 9 factors with Eigen values more than 1 for African countries based on their Eigen values, and at least 8 factors with Eigen values greater than 1 have been found for Asian countries. The study revealed four components with Eigen values larger than one. The cumulative percentage of variation for the nine components for African nations was 65.23%, and the cumulative percentage of variance for the eight elements for Asian countries was 63.91%, both of which met the percentage of variance requirement for social science research. Varimax rotation was applied to the factors in order to produce a column structure that is easier to read. Items with factor loading of at least 0.5 were selected. Because the correlation between the variable and the factor loading .

Frequency Table

gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	143	45.4	45.4	45.4
	female	172	54.6	54.6	100.0
	Total	315	100.0	100.0	

age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30	50	15.9	15.9	15.9
	30-45	50	15.9	15.9	31.7
	40-55	150	47.6	47.6	79.4
	55-60	65	20.6	20.6	100.0
	Total	315	100.0	100.0	

affordable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	306	97.1	97.1	97.1
	no	2	.6	.6	97.8
	maybe	7	2.2	2.2	100.0
	Total	315	100.0	100.0	

INTERPRETATION

Following a cross-examination of the extraction method factors loading and with the aid of literature, they were put into one category, the investment behavioural category, which is distinct because it is primarily influenced by an investor's emotions.

residence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	rural	174	55.2	55.2	55.2
	urban	141	44.8	44.8	100.0
	Total	315	100.0	100.0	

doctorsadvice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	stronglyagree	223	70.8	70.8	70.8
	agree	83	26.3	26.3	97.1
	neutral	9	2.9	2.9	100.0
	Total	315	100.0	100.0	

available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	305	96.8	96.8	96.8
	no	5	1.6	1.6	98.4
	maybe	5	1.6	1.6	100.0
	Total	315	100.0	100.0	

INTERPRETATION :

The first element was identified is Investment Knowledge. Six items were loaded for African countries and five items were loaded for Asian countries because the assertions in the factor are directly related to investor knowledge. That information can be readily interpreted for both of the continents.

Investor risk tolerance is the second factor discovered through factor analysis. The investor who is risk averse prefers much more traditional assets or adopts a conservative strategy to investing, while the one who can tolerate risk to an extreme degree considers having alternative assets in their portfolio.

incomesatatement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10000	22	7.0	7.0	7.0
	10000-20000	24	7.6	7.6	14.6
	20000-40000	70	22.2	22.2	36.8
	40000-60000	39	12.4	12.4	49.2
	60000-80000	41	13.0	13.0	62.2
	80000	119	37.8	37.8	100.0
	Total	315	100.0	100.0	

use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	297	94.3	94.3	94.3
	no	10	3.2	3.2	97.5
	maybe	8	2.5	2.5	100.0
	Total	315	100.0	100.0	

educationalstatus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	20	6.3	6.3	6.3
	house wife	1	.3	.3	6.7
	employed	292	92.7	92.7	99.4
	unemployed	2	.6	.6	100.0
	Total	315	100.0	100.0	

INTERPRETATION :

Investor risk tolerance is the second factor discovered through factor analysis. The investor who is risk averse prefers much more traditional assets or adopts a conservative strategy to investing, while the one who can tolerate risk to an extreme degree considers having alternative assets in their portfolio.

purchased

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	303	96.2	96.2	96.2
	no	6	1.9	1.9	98.1
	maybe	6	1.9	1.9	100.0
	Total	315	100.0	100.0	

beneficialpatient

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	stronglyagree	222	70.5	70.5	70.5
	agree	93	29.5	29.5	100.0
	Total	315	100.0	100.0	

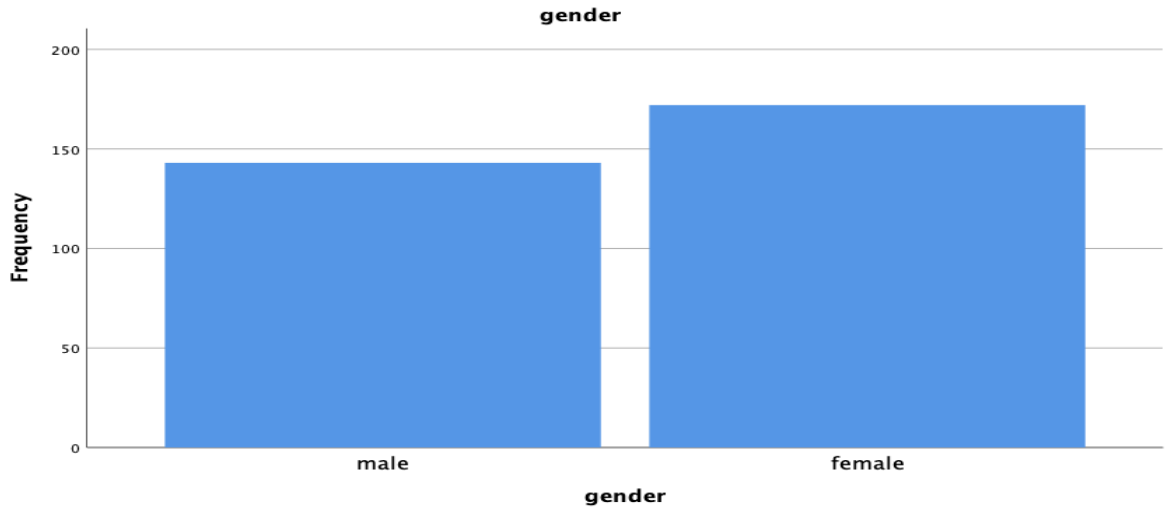
everyagebenefit

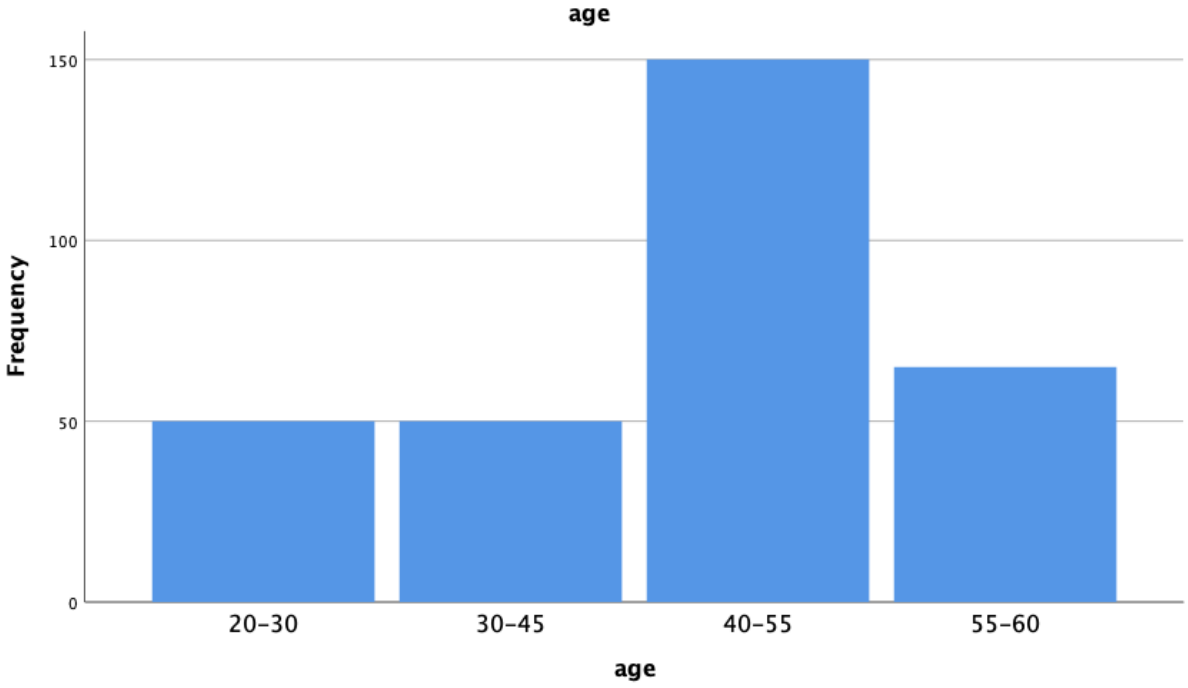
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	stronglyagree	222	70.5	70.5	70.5
	agree	90	28.6	28.6	99.0
	disagree	3	1.0	1.0	100.0
	Total	315	100.0	100.0	

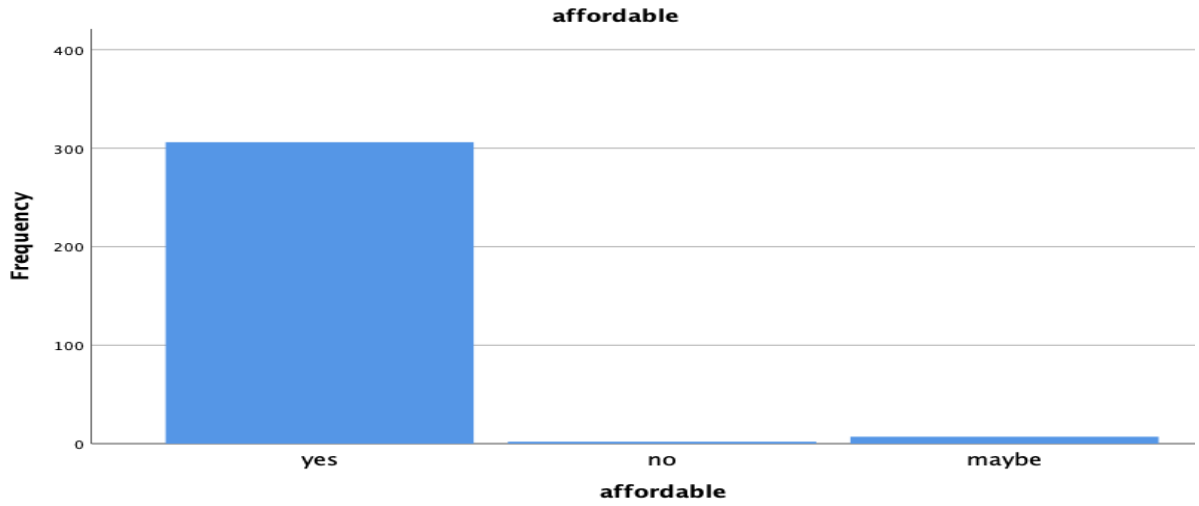
batterthan

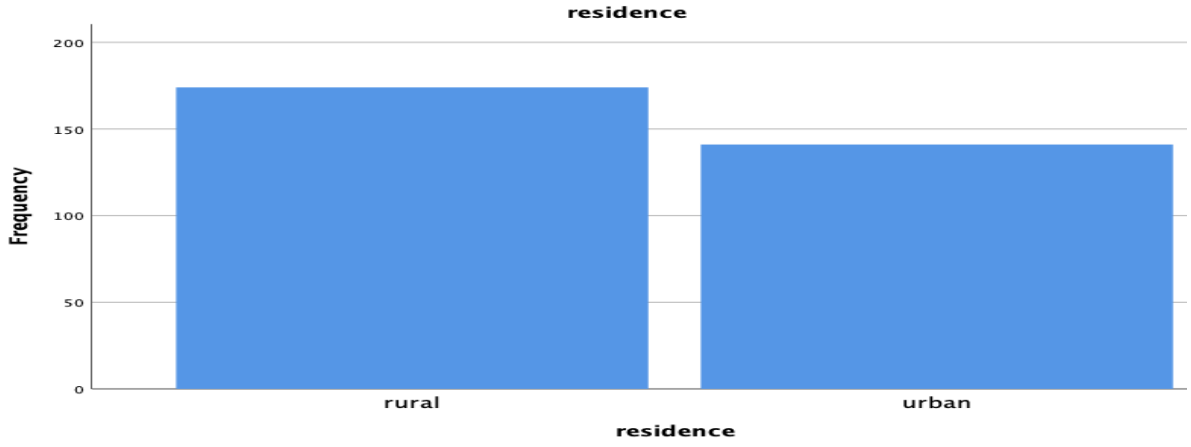
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	305	96.8	96.8	96.8
	no	4	1.3	1.3	98.1
	maybe	6	1.9	1.9	100.0
	Total	315	100.0	100.0	

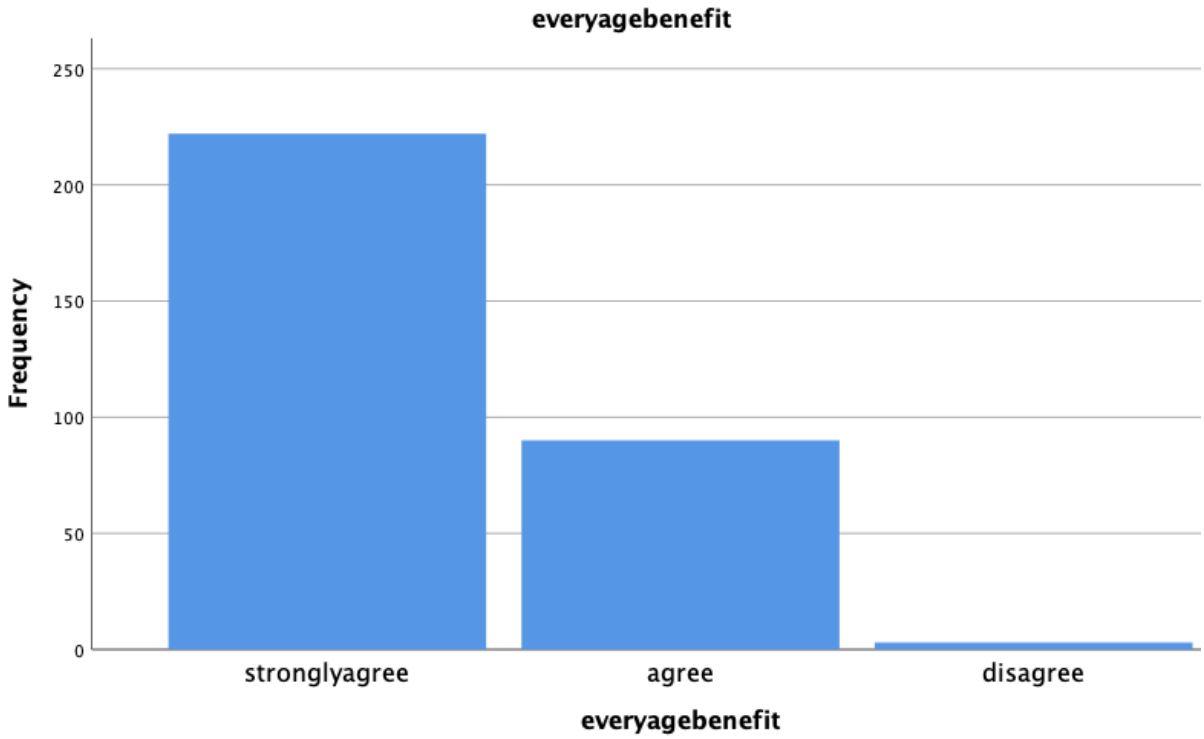
Bar Chart

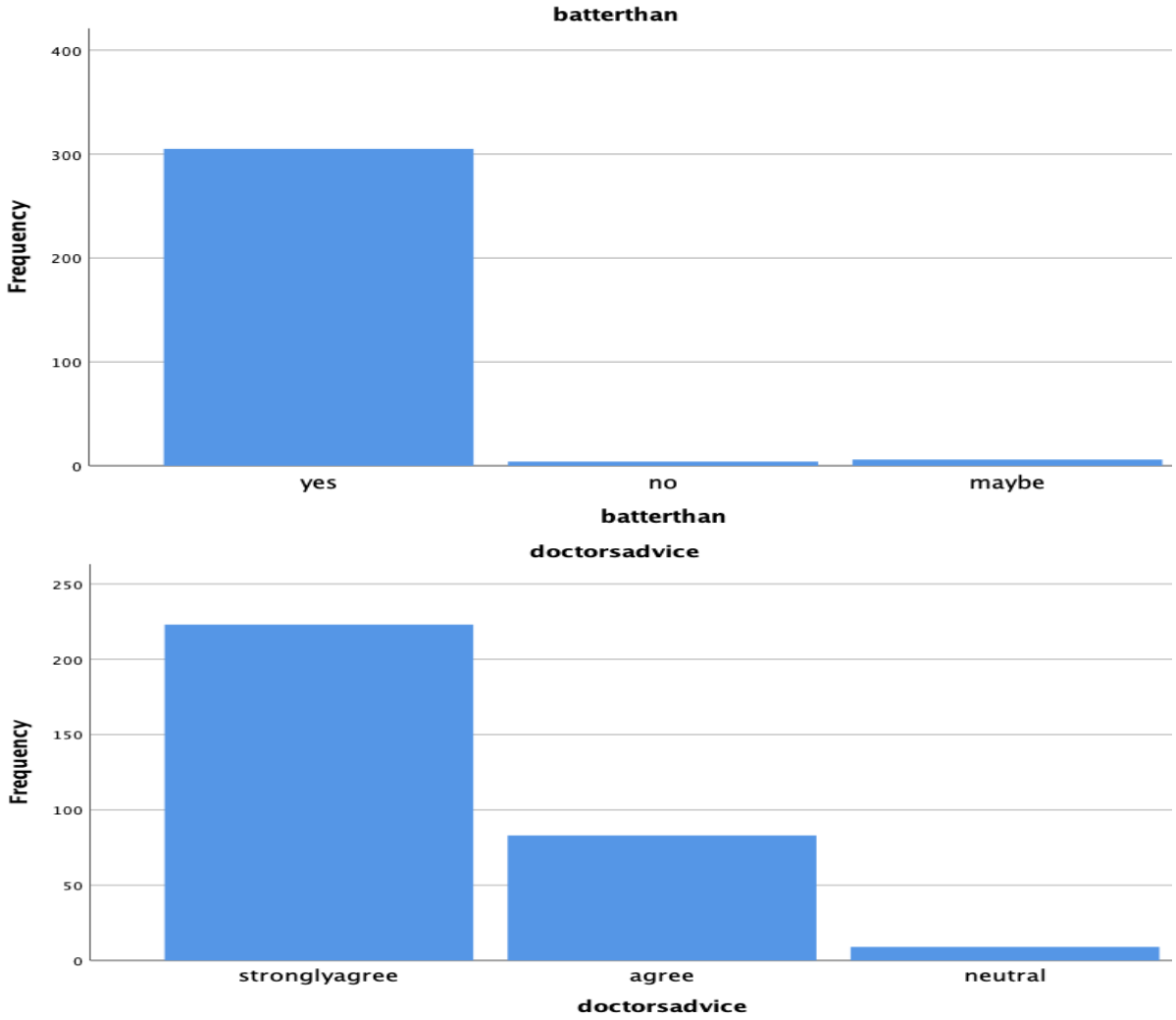





affordable
Frequency
400
300
200
100
0
yes
no
maybe
affordable


residence
Frequency
200
150
100
50
0
rural
urban
residence


everyagebenefit
Frequency
250
200
150
100
50
0
stronglyagree
agree
disagree
everyagebenefit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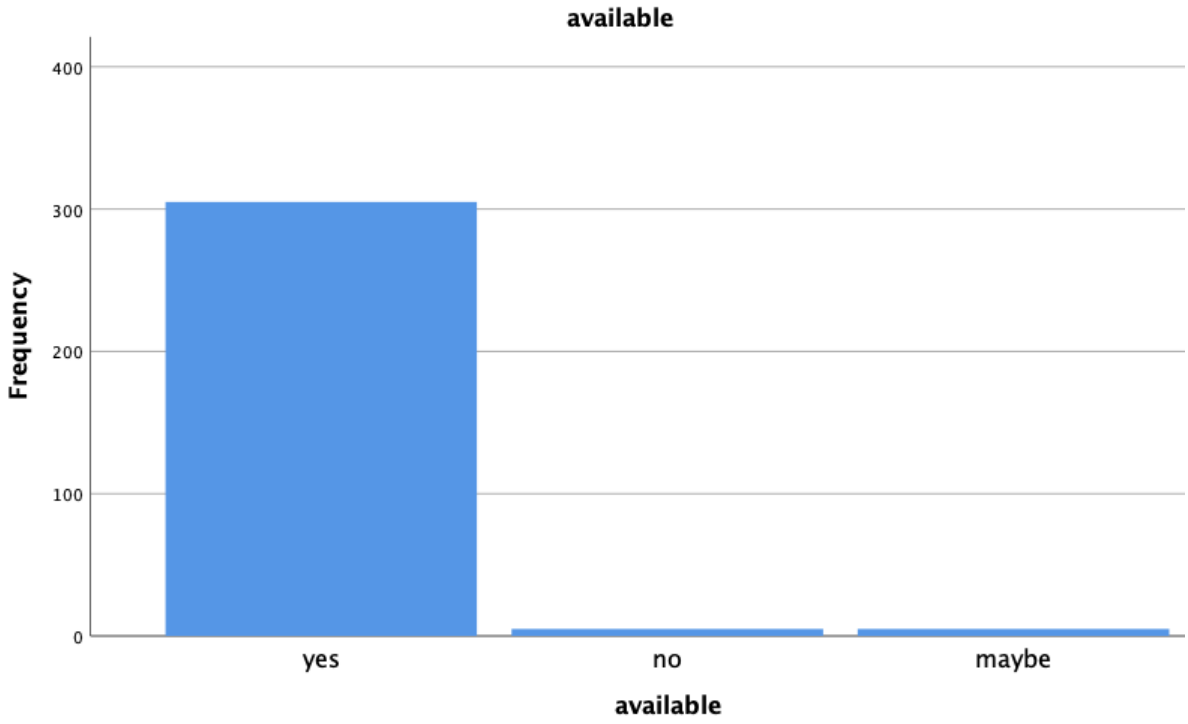
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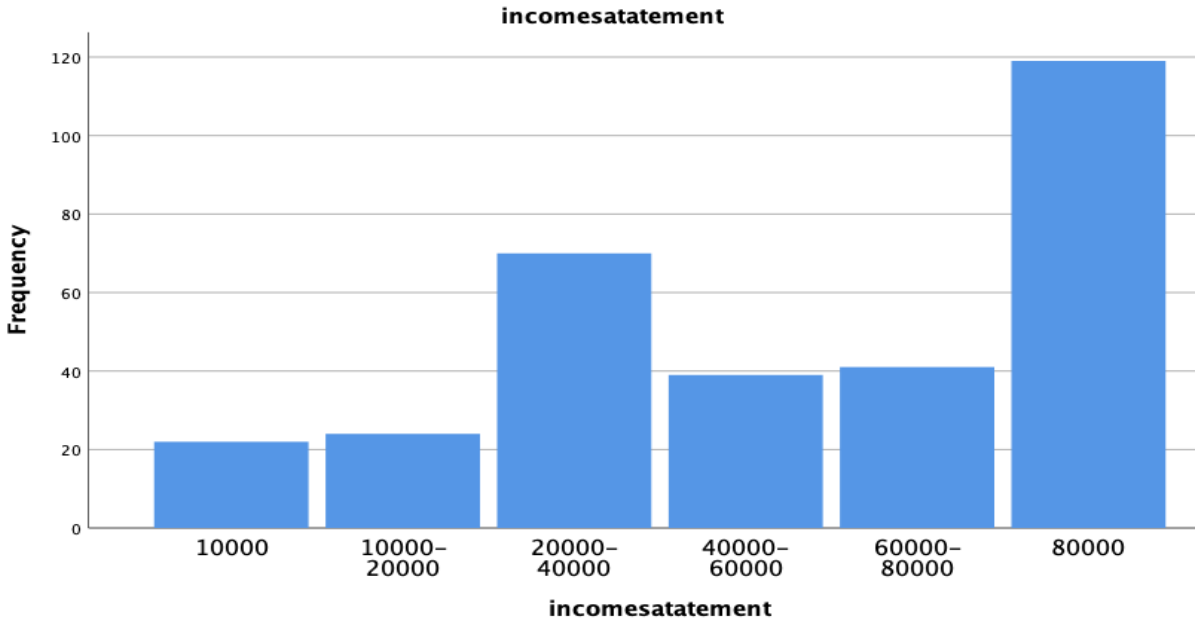
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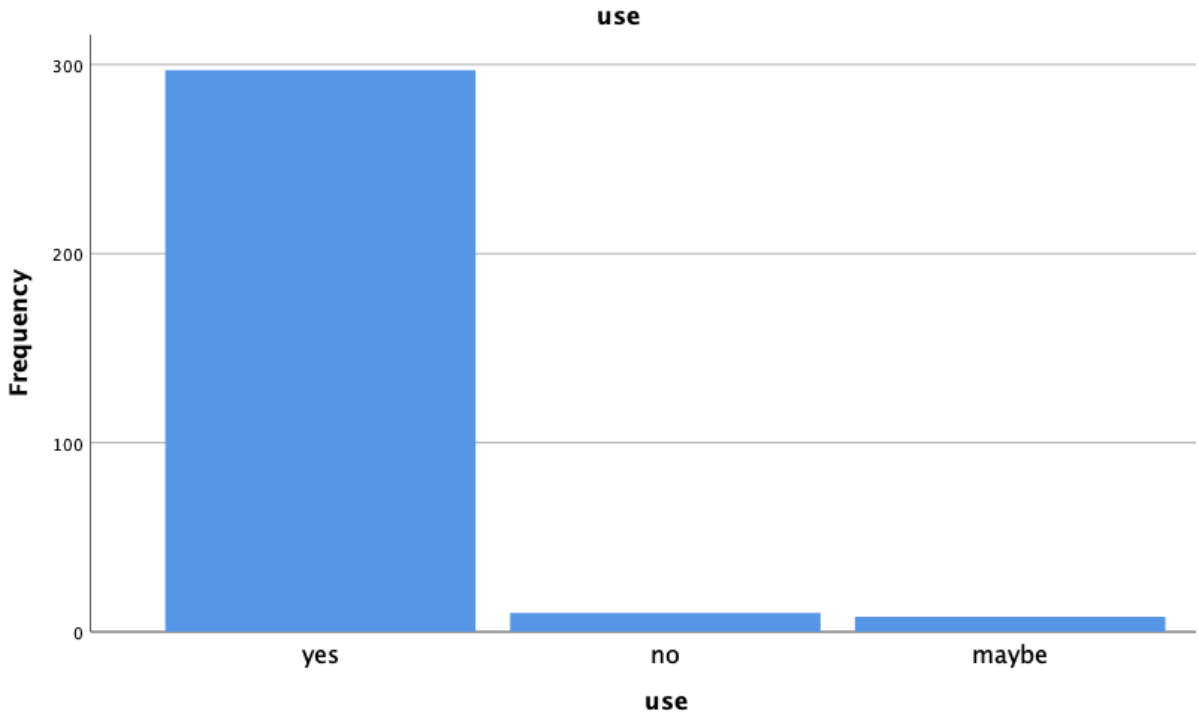
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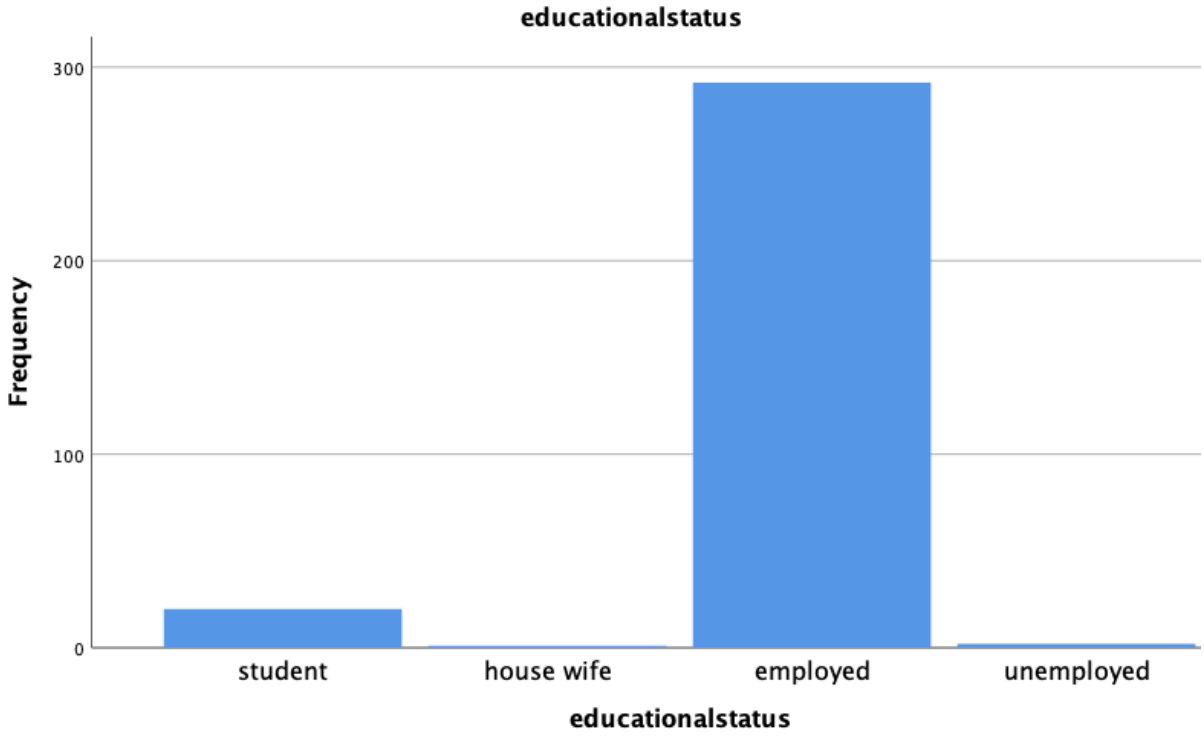
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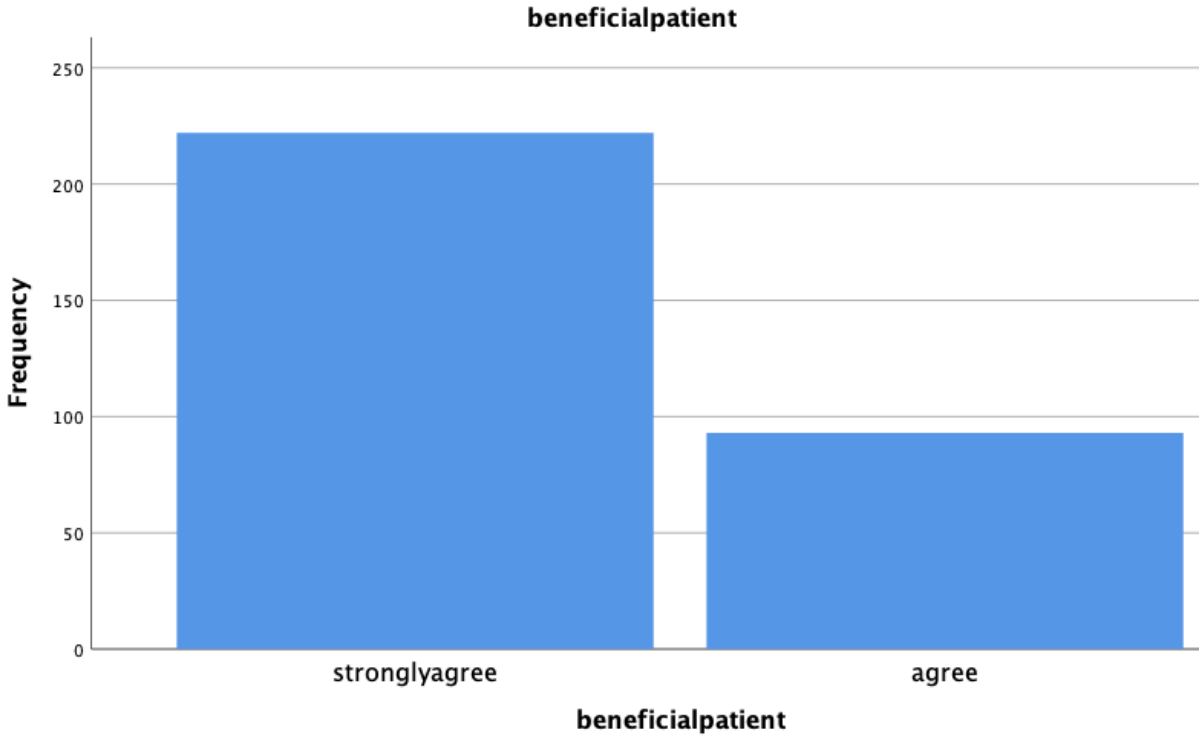

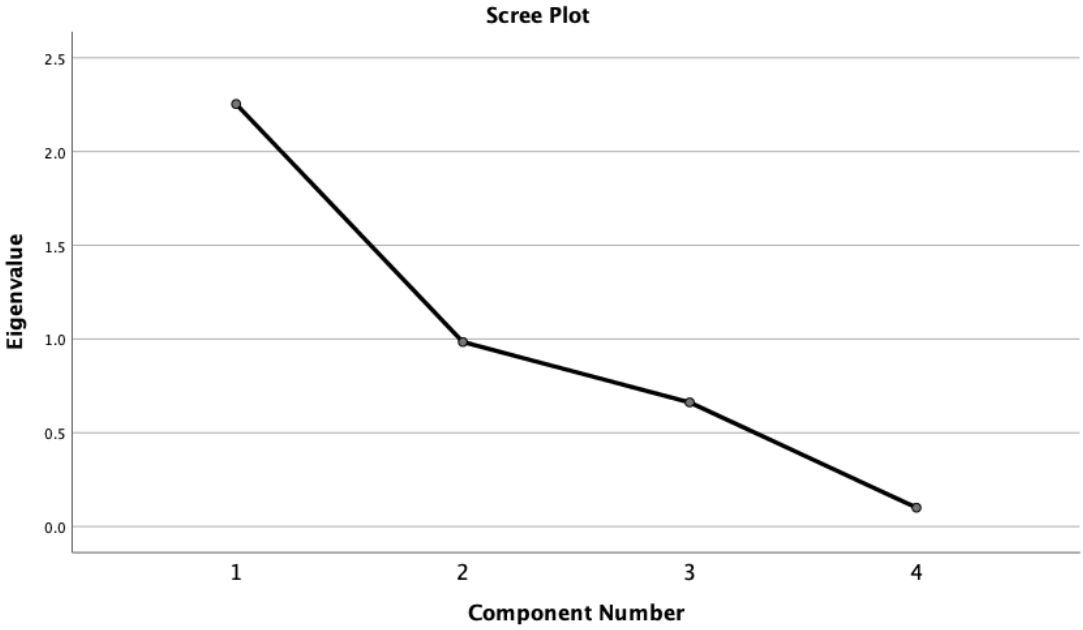

INTERPRETATION :

The eigenvalues are plotted on the y-axis of a scree plot, and the number of components is plotted on the x-axis. It consistently shows a declining curve. The number of components that should be created by the analysis is indicated by the "elbow," which is where the slope of the curve is visibly levelling off.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

INTERPRETATION :

Consideration is given to the issue of fitting slick curves to data on the group of rotations. When resampling or denoising data points made up of rotation matrices collected at various times, this issue occurs. The orientation of some physical item, like a camera or a flying or submerged instrument, is usually represented by the rotation matrices.

FINDINGS

In order to verify the measurement model and investigate the correlation between the dependent and independent variables, this study used a confirmatory factor analysis (CFA). This study made use of reflective measuring. The measuring model demonstrated the reliability and validity of every item.

According to the Fornell-Larcker criterion, the indicator must be more reliable than cross-loading on the other construct, which is represented by the outer loadings. Internal consistency reliability is represented by Cronbach's alpha, convergent validity by Average Value Extracted (AVE), and discriminant validity by the items measuring various concepts. The respondents' characteristics for the descriptive analysis .

CHAPTER – 5

RECOMMENDATION

FUTURE IMPLIMENTATION OF ERGONOMIC FOOTWEAR

The term "ergonomics" is used in the context of the workplace to refer to the optimisation of working conditions, operational procedures, and the workspace in order to safeguard people from weariness and hazards.
A common cause of work incapacity and early retirement (due to diminished ability to work), according to the Federal Ministry of Labour and Social Affairs, is issues with the musculoskeletal system. Joint and spinal issues account for the majority of issues. The type of activity, energy expended, loads, posture, vibration, and weariness are all directly related to the development of these disorders, among other things.
To address this, it is first required to modify work procedures, workstations, and working environments—all of which fall under the broad category of ergonomics in the workplace. Safety footwear, which has a significant impact on the body, mobility, and load, is another aspect that has not received much attention in working conditions where safety and protective clothes must be worn. According to studies*, the construction and style of shoes not only affect the distribution of plantar pressure but also the body's alignment from the joint angles in the legs to the posture of the upper body. As a result, it is possible to change the strain put on the various locations and the activation of the muscles.
Foot pain can be brought on by inadequate support and pressure points. Given the relationship between bones, joints, tendons, ligaments, and muscles, the feet are frequently the root of common issues in the spinal region. Individual foot shape and position, as well as walking and rolling motions, all affect pressure distribution across the foot and joint angles. Incorrect foot alignment, such as hollow, flat, and splay feet, are another major risk factor. When standing, these incorrect postures already change how pressure is distributed. By altering leverage and the locations at which force is delivered, other variations in joint angle positions can also result in an increase or decrease in the pressure on muscles and joints.

What parts of a safety ergonomic shoe can affect the outcomes in future?
exclusive construction

The dimensions of pressure distribution and joint angles described above might be affected by solitary construction. The region on which the force has an impact and, consequently, the pressure distribution, are influenced by the sole's shape. The joint positions that are taken while making contact with the ground can likewise be changed in the same way. This holds true both when the foot is planted and when walking with a rolling motion. In the sole structure, extra guiding or supporting components are frequently used. These are used to control movement and correct foot misalignments, ultimately preventing injury and strain damage. For instance, to lessen excessive foot pronation and avoid harmful strain through
the inside side of the foot frequently has medial supports added for this movement .

The metatarsal region frequently has special torsion reinforcements because they lessen the foot's ability to spin in the front and back, protecting the area from harm.
The uvex 1 product line of safety footwear also includes shoes with ergonomic sole designs. The sole incorporates a pivot point to promote rotation in the front of the foot, flexible grooves to increase movement, and optimised mid-foot torsion stability. Overall, the outsole's design encourages the foot to flow naturally from the heel through the outside mid-foot and all the way to the big toe.

The body must, to a certain extent, absorb the stresses that arise during walking itself in the absence of additional shock-absorbing components. The forces are consequently allocated to regions of natural subcutaneous fat. When there is more pressure, joints are adjusted to bend more forcefully, increasing the level of absorption. Less energy is needed by a person's muscles to process the relevant forces the higher the shock absorption in the shoe. This also holds true for spinal strain and joint stress. The additional material broadens the surface area, which eases strain on areas that are subjected to heavy loads. The sole's kind of material and form determine how much stress is absorbed, and materials of various densities are used. Lower density materials and more sole layers help to produce a higher level of shock absorption. Sports footwear frequently contains EVA polymers, sometimes with the addition of gel or air pockets. Safety footwear frequently has rubber or PUR soles, depending on the application area. The multi-layer sole system of the uvex 1 safety shoe line features a low density PUR midsole material for the best shock absorption.
The design and composition of a safety shoe's shaft significantly affect how comfortable the wearer is. The supporting components are equally as important as fit and breathability. To make the environment within the shoe as cosy as possible for the wearer, breathable materials are used. The goal is to provide proper air circulation while wicking away moisture from the foot. This needs to happen in all of the shaft's layers for the optimal outcome. The reduction of pressure points and friction is another aspect of wearer comfort. A padded tongue or collar can be incorporated into the shoe to achieve this, ensuring that there are no sharp edges or uneven.
transitions. The uvex 1 safety footwear line features a unique structure that offers the foot a certain amount of stability. A portion of the outsole extends past the shaft and serves as reinforcement in this way. In order to prevent improper strain and going over on the joint, the sole supports the mid-foot and heel.
Fit is another crucial aspect that affects whether or not a person chooses a specific model of safety footwear. Once more, the unique shape of the foot is important. This is mostly influenced by the length and width of a person's foot, in addition to any specific characteristics and foot alignment issues.
Standard shoe sizes almost always account for the length of the foot. To adjust the interior of shoes to various foot widths, certain producers of safety footwear offer multiple width systems. The selection is based on measuring the width of the foot starting from the metatarsophalangeal joint (at the base of the big toe) and the circumference of the football at the height of the base toe joints to the little toe's basal joint.
In order to apply this system, a variety of new features are introduced, such as insoles that can
In the end, the multiple width method enables us to accommodate a wider variety of different foot shapes. There are numerous ways to include ergonomics in safety footwear overall. As was mentioned above, today's safety footwear lines come with a variety of ergonomic features. Nevertheless, ongoing innovation is occurring to guarantee that wearers receive the best support and protection in their regular working environments.

CHAPTER – 6

Conclusion

SUGGESTIONS :

- Authorities should educate rural residents on the present ergonomic footwear available to them.
- Reducing service fees encourages more people to use the current ergonomic footwear .
- Provide appropriate education on topics like ergonomic footwear beneficial for pregnant women, diabetic person etc.
- Provide information on the benefits of using current ergonomic footwear facilities and make people aware of ways that current ergonomic footwear system .

This study used the Theory of Planned Behaviour and Expectancy-Value Theory to examine how consumers perceive their intention to make a purchase. The findings demonstrate a substantial association between purchase intention for ergonomic footwear and utilitarian consumption, consumer perceived value, and consumer perceived trust.
It may be inferred that consumers that engage in utilitarian consumption are more practical in nature because they look for footwear that is appropriate based on their comfort level .

Customers who perceive more health benefits from utilitarian consumption are more likely to purchase ergonomic footwear. Customers anticipate receiving health benefits equal to the money incurred in terms of perceived value. Therefore, the intention to purchase ergonomic footwear increases in proportion to the expected health benefits. Buying comfortable footwear.
However, consumer purchase intentions for ergonomic footwear are not significantly impacted by word-of-mouth. Negative reviews that are aggressively spread by seasoned customers will cause consumers to have less faith in the products.
Customers' concerns about wearing comfortable shoes have management implications; this suggests that the benefits to their health serve as utilitarian values in their purchasing decisions. Consumers also rely greatly on the worth of the good or service rather than the advertised price tags; they are more concerned with the advantages to their health than the price.
Consumers have a strong inclination to believe that ergonomic footwear is directly related to health products, which results in purchase intentions. Due to the poor word-of-mouth that is transmitted by experienced consumers and maybe the lower propensity .
Consumer perceptions of consumer value, utilitarian consumption, and perceived trust were found to be crucial in this study. It is thought that there are more factors that could help us comprehend ergonomic footwear. As a result, researchers may look into more underlying elements that affect customers' intentions to buy ergonomic footwear.

In conclusion, public knowledge of foot health must be raised through foot care education in order to promote a productive and healthy lifestyle. in particular, those working in the healthcare sector . Podiatrists, chemists and physiotherapists are a few examples of healthcare professionals who should assist in educating the public and raising awareness of foot health .

According on the findings of the design and comfort evaluation, we have outlined the design principles and procedures for shoes for expectant women as follows:

Pregnant women's shoes must be designed with people in mind, strictly using the human characteristics of the wearer as the foundation. This will protect the health of the mother and unborn child inside the womb and take into account the significant psychological changes that occur during pregnancy.

Shoes for pregnant women are designed to be comfortable to wear and to decrease the effects of the physiological phenomenon on mental fatigue and irritability.

Pregnant women shouldn't be put under additional strain, therefore the shell fabric and instep lining should be moisture- and air-permeable; the sole materials should be moderately severe, wearable, non-slip, and have a high shock-absorbing function; and shoes for expectant women should be stylish and roomy.

Because a pregnant woman's gravity centre is different from a woman's after-delivery gravity centre, pregnant women shouldn't wear high heels; instead, the heel height should be moderate. Pregnancy-related fatigue will be lessened as a result.

A fourth of all the bones in the human body are found in the foot, which has a complex structure made up of bones, joints, nerves, and muscles. The fact that this sophisticated organ is modest in size relative to the size of the entire body and that it is vital to the body as a whole.

Therefore, picking the right shoes is crucial; research shows that by including appropriate items and indicators like picking more suitable fabric for ventilation, paying closer attention to more accurate anthropometric measurements in the toe area for more comfort, and having a suitable insole to prevent musculoskeletal disorders in the sole and For those suffering from conditions like diabetes, kneeling down to one of the shoes is crucial. Consequently .

CHAPTER – 7

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