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The Adaptation of *Ikigai* Concept in the Design Process for Elderly Garment

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Abstract

The purpose of this research is to explore the application of Ikigai principles in the garment design process for the elderly. "Ikigai" is a Japanese term that signifies subjective well-being and is associated with life satisfaction, self-esteem, morale, contentment, and a sense of life's purpose. Recently, both patients and caregivers have reported challenges in managing clothing changes for weaker elderly individuals and obtaining necessary medical examinations. This study aims to extract keywords from the literature review to help establish an appropriate conceptual framework for designing garments for the elderly. A qualitative approach was employed, which involved reviewing relevant articles and conducting interviews focused on geriatric clothing design. The collected data was analyzed using a thematic technique to identify key themes in the design process for elderly clothing. The resulting framework connects Ikigai principles with the stages of the design process. It offers recommendations for integrating an 'Ikigai-infused' design decision-making process into products for elderly clothing. Designers can utilize these concept to enhance engagement with consumers while fostering feelings of satisfaction and pleasure.

Keywords: *Ikigai,* Design Process, Elderly Clothing, *Kansei* Engineering, *Ikigai* Conceptual Framework

Introduction

As our population ages, the importance of designing products that cater to the needs and desires of the elderly becomes increasingly crucial. However, creating products that truly enhance the lives of older individuals goes beyond mere functionality; it requires an understanding of their deeper motivations and aspirations. The number of older people worldwide is increasing rapidly. Similarly, the number of aging people in Japan, Korea, Thailand and Malaysia is growing with an expectation of reaching the aging society in the year 2030, whereby older persons will constitute 15% to 29% of its population. The healthcare sector has seen robust growth over the past decade and this sector has one of the highest multipliers in the economy. The government aims to further grow this sector by encouraging

more private investments in areas such as aged care services, manufacturing of pharmaceutical products, medical devices, clinical research.

Producing guidance and tools for primary care providers on the comprehensive assessment of health status in an older person and the delivery of the integrated health care will enable them to maintain, slow and or reverse declines in their physical and mental capacities (10 priorities towards a decade of healthy ageing, WHO Organization, 2017). The main focus of the health sector is to achieve 'Quality of Life of an Advanced Nation', the health sector has also some role to play in the other strategic directions. Quality Healthcare & Active Healthy Lifestyle has been set as the main Key Result Area (KRA) for the health sector for the 10MP. (Country Health Plan: 10th Malaysia Plan 2011-2015). The strategy is to expand the capacity and increase accessibility, with initiatives in developing services such as new facilities, upgrading existing facilities, and enhancing healthcare personnel capacity and capabilities. The role and the importance of health care systems in the quality of life and social welfare in the modern society, have been broadly well recognized. The health care garment is a part of the healthcare services that concern on disabled elderly satisfaction. Thus, this service is a crucial part that will pursuit of disabled, elderly satisfaction while at home, care center or under treatment.

In addition to physiological and psychological changes, the social roles of elderly people have also undergone changes. Most elderly people retire and enter the 'empty nest' stage at the age of 65, they not only have more disposable money but also more disposable time. These life-changing events have a significant impact on elderly lifestyle and consumption concepts (Wang, M., and Shaari, N. 2022). The clothing design needs of senior citizens have changed significantly from the past to the present. Recently, the elderly have had difficulty selecting an appropriate garment because most of their body posture has changed rapidly as a result of numerous circumstances such as obesity and illness. The majority of garments on the market employ normal sizing, which limits the options for the elderly, who must wear oversize garments to fit their bodies. As such, elderly women's needs require extensive design considerations. The current elderly people experienced are increasingly concerned about having self-esteem, looking good, being healthy, and living longer, they are willing to spend on products and services to enhance their sense of wellbeing. This is where the principles of Ikigai can be invaluable.

The Elderly Apparel

In designing a special garment for the disabled or elderly users, the pattern construction is a crucial elements to be considered in the fashion design process. Singh & Srivastava (2016) identified the importance of designing some clothing for elderly so that dressing and undressing could be made easier and simpler and no more trouble for them. Liu et al (2016) more than half of the hospitalized patients are unwilling to wear patient clothing and are unaware of the reasons for wearing these uniforms, such unwillingness has been attributed to the poor comfort, fit, appearance, and hygiene of these uniforms, which can also bring psychological discomfort. The personal care garment allows access for personal, intimate hygiene, while maintaining a sense of dignity for the wearer. Considering the direct contact between clothing and user, the information about anthropometric biomechanical and ergonomic are of extreme relevance for the model (garment) development for different needs of user (Das Neves, Brigatto, Medola, & Paschoarelli, 2015) . According to Araújo De

Brito et al. (2016) to identify the cognitive profile of the elderly and its association with anthropometric and functional aspects. The implementing some of the garment design for patients dignity, patients feel worth of their quality of life consider on comfort, ease of movement in addition to the better appearance (Mohamed, Nagda, & Mady, 2015).

The present invention comprises an improved medical gown for increased patient privacy and dignity, comprising a conventional medical gown With flaps that open to allow various parts of a patient to be accessed. While covering the rest of the patient; ensuring their privacy and comfort during an examination or procedure (Hauswirth , 2008). Further, according to Baillie & Matiti (2013) explores dignity within the context of equality and diversity, and examines some of the ways in which discriminatory behaviors of health- care workers contributes to loss of dignity in healthcare. Those behaviors and physical presentation are the component to control disabled elderly or patients feeling comfortable and valued (Baillie, 2009).

Generally, disabled elderly needs more attention from the care taker, health care or person who responsibility to take care off. According to Hoy, Wagner, & Hall, n.d.(2016) stated that not only be on codes and guidelines for the care providers, but on the entire health care system, and how dignity can be protected and enhanced through policies and organizational need to restructures. From expression of respect for patients dignity is illustrates on how people surrounding then attitudes, actions, and behaviors that can either contribute to detract (Henry, Rushton, Beach, & Faden, 2015). Addressing the multiple needs from the point of 'patients' is one of the important factor in this research. The three main viewpoints on the elements for PCC (patient care center) were identified: "treating patients with dignity and respect,""an interdisciplinary approach" and "equal access and good outcomes." (Scholl et al., 2014). Høy et al., (2016) stated this knowledge emphasizes the potential of a dignity-oriented approach to the care of older people and may assist nurses and other health care providers to understand the maintenance of dignity from the residents' perspective. The current state of garment design for the disabled elderly is characterized by a lack of consideration for their specific needs and preferences. According to the data, almost all problems in elderly products are related to their physical and psychological worries, which necessitate the resolution of critical problems in order to meet their needs. Studies have shown that many individuals with disabilities struggle to find clothing that is both comfortable and aesthetically pleasing.

Ikigai Paradigm

With the understand from elderly deals in clothing it is basically closely related to the *ikigai* in fulfilling the elderly needs. Ikigai appears to have roots in Japanese history and has spread to modern Japanese. However, a specific time frame for the emergence of *ikigai* seems complicated to determine because of the lack of historical information in contemporary Japanese literature (Mathews, 1996). *Ikigai* first appeared in contemporary language in 1908 and has since been used to describe the value or individualized experiences of a happy existence (Kanda, 2011, as cited in Kono & Walker, 2020). Later, Mieko Kamiya, a Japanese psychiatrist, pioneered the research of *ikigai* and published a book about the meaning of life in 1966 (Kono & Walker, 2020a). The concept of *Ikigai*, originating from Japanese culture, represents a sense of purpose and fulfilment in life. The *ikigai*, which translates to "having a purpose" in English, is of Japanese origin, associated with the feeling of self-fulfillment earned by pursuing a meaningful life. *Ikigai* relates more to actions of devotion to things an individual

thoroughly enjoys, and it implies a correlation to aspects concerning a sense of achievement and fulfilment and pursuing goals. The *ikigai* principles, which encompasses the intersection of what one loves, what one is good at, what one can be paid for, and what the world needs, has the potential to inform the development of clothing that aligns with the unique needs and purpose of the disabled elderly (Wu et al., 2021).

Fundamentally the sense of *ikigai* includes the awareness of an individual's values, for example, their life goals and the meaning of existence. *Ikigai* is not simply associated with positive and negative emotions (hedonic well-being) but relates to enduring difficulties and a sense of purpose (eudaimonic well-being) (Kumano, 2018). Recently, people have focused on Ikigai as focused on longevity. These days, it seems the concept of *ikigai* means a lot in practicality when it concerns services and guidance that designers can engage in and let the elderly enjoy during their silver ages. Kamiya emphasized that the concept of *ikigai*, cannot be understood without lived experience. It is a feeling that's in your body when you are living your mission. In other words, those who have known loss and hardship can feel the *ikigai* more strongly; the self-respect they built came from living without too much dependence on others. Even when part of their body stopped working, they were still in touch with a meaning of their life. When a life throws a challenge, trying to find a deeper meaning instead of avoiding the challenge, is a way of *ikigai* (Kamiya, 1966). *Ikigai* closely related the human sensory or *kansei* as the physical and psychological does effect the completeness of *ikigai*.

Kansei Approach in understanding Elderly Needs

Looking at the interaction of *ikigai* , does not stands on its own but it always infuse with *Kansei* to make it interconnected between physical and psychological needs. As a result, the customers will be happy and satisfied. The basis for *kansei* is the human six senses. Among five senses, the visual based emotion is found to be the most dominant sensory stimulation. The term *Kansei* appears in the design community thanks to the works of Mitsuo Nagamachi on "Emotional Engineering", and of Kenichi Yamamoto (President of Mazda Automotive Corporation), who used the term "*Kansei* Engineering" for the first time in 1986 during a presentation made at Michigan University. Since then, *Kansei* Engineering was developed in both academic and industrial fields. *Kansei* is a Japanese term used to express an individual's impression of an artefact, situation, and surrounding (Lokman, 2010). It would be great once the stimulus is fully accepted by all senses; it could be a combination of eyesight, taste, and touch. *Kansei*-based design for products or services offers a practical guideline for product or fashion designer and also an evaluation tool for the existing products or services. A popular *Kansei*-based design methodology is called as *Kansei* Engineering (KE). KE has a unique superiority in terms of its flexibility to engage with other methods in improving product function and appearance. This method will construct a conceptual framework in identifying the interconnection of *ikigai* deals much as a foundation for developing a potential garment criteria for elderly. This review covers the connection between *ikigai* dan the design criteria required in elderly garment base on the design preferences.

Methodology

In this study, the conceptual framework is important to extract the basic keywords that is related to the disabled elderly issues. The conceptual framework represents the idea development in the crucial area that need to be focused on this study. This study divides the data acquisition process into four stages of research process: (1) identification, (2) keywords

gathering, (3) organization data, and (4) development of conceptual framework. Figure 1, shows the flow diagram describing the process of articles being reviewed and selected into a cluster group. A qualitative study was carried out to investigate the application of the *ikigai* idea to garment design for the impaired elderly. The *kansei* methodology was applied through the process of collecting the significant attributes using the KJ technique for data classification and sorting (Cheng, 2014). This study chooses *Kansei* Engineering (KE) methodology that is a differentiated customer-centered design process for product design, translating the customer's psychological emotions and needs into the realm of product design parameters to comprehend the customer's experience, feelings, emotions, preferences, and requirements. This method will include the collecting of significant keywords linked to the subject area, which will be categorized using the KJ technique

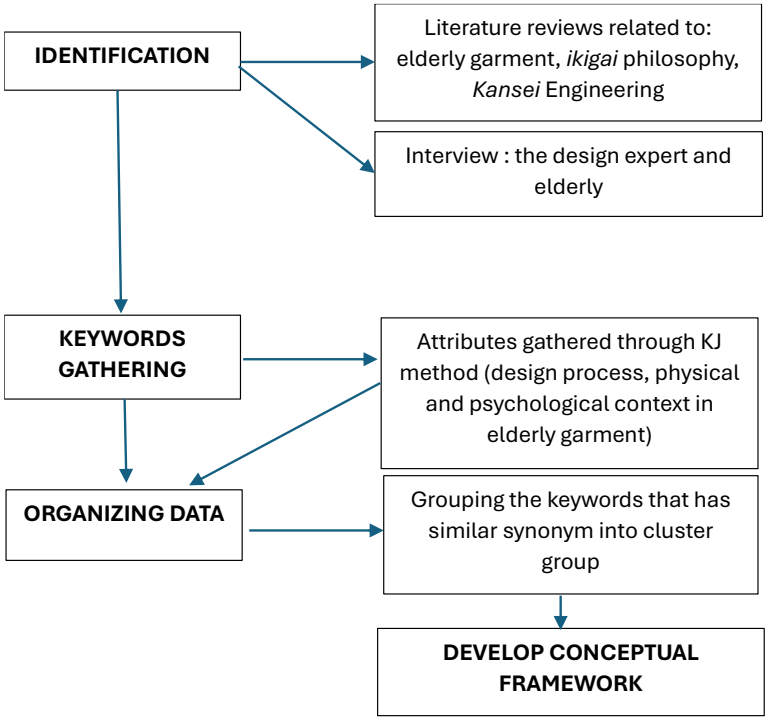


Figure 1: Flow diagram describing process of articles being reviewed and selected.

Based on the literature review has been synthesis into the significant factor of KJ method, where the categories were built from the literature review keywords as in Table 1. KJ-technique, is an idea generating and prioritizing technique named after its inventor, Jiro Kawakita (KJ). This technique is one of the most popular brainstorming tool used to organize ideas and data (Scupin, 1997). It is the research process to identify the influencing factors from a different perspective, which is from literature review and an interview with an expert and elderly persons. Those categories are focusing on criteria, solution, keywords and references. The actual KJ method applies with four essential steps which is; 1) attributes labelling, 2) Cluster the attributes or keywords into grouping, 3) chart making, 4) explanation. (Scupin, 1997).The step of KJ methods for step 1: attributes making, capture the specific attributes or keywords that related to the problem and list down all the keywords found in literature. Then, further exploration on categorize the specific attributes that represents in the grouping in step 2. The cluster group elaborates on several features with comparable requirements or synonyms in the category, as seen in Table 2 and 3. It is an important component in the design process which assists in the organization, analysis, and synthesis of

information in order to generate original and creative design solutions. The technique ensures that the design meets the demands and preferences of the users while also enhancing creativity and ideation. Prioritizing essential attributes helps to find the most important attributes for the target audience, making them more practical, achievable, and connected with the product objectives.

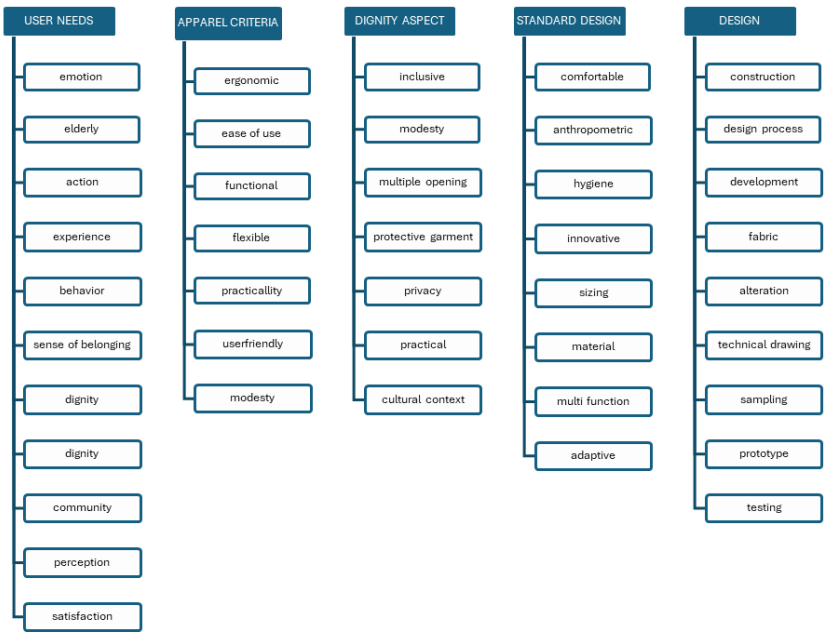
Table 1
Clarification Discussions and Keywords from Literature Review

RELATED DISCUSSIONS	KEYWORDS	REFERENCES
Ikigai		
Create clothing that supports daily activities, promoting a sense of autonomy and purpose	• Functional • Community engagement • Connection • Sense of belonging • Love of product • Inter disciplinary approach	Natasha, R, Kamino,W & etl. (2023), Scholl et al.(2014). Høy et al., (2016)
Incorporate easy-to-use garment for health and comfort	• Adaptive • Adjustable features • Ease of use • Breathable materials • Benefit of the product	Nathan, S. (2023)
Offer fashionable options that allow personal expression and maintain a sense of identity	• Self-expression • Dignity • Cultural elements • Purchasing values	Natasha, R, Kamino,W & etl. (2023)
Incorporate tactile features or patterns that provide cognitive stimulation	• Cognitive stimulation • Colours psychology • Product appearance • Presentation • Happy existence	Kanda (2011), Kono & Walker (2020)
Elderly Apparel		
Modifications and adaptation in order to make clothing more comfortable, functional, beautiful and convenient to use.	• Comfortable • Functional • Beautiful • Easy to use • simple	Singh & Srivastava (2016)
Promote dignity in their behaviour with patients and be aware of their impact on vulnerable patients' dignity.	• promote dignity • behaviour • patients' dignity	Baillie (2009).
Organizations should support the provision of equality and respect for diversity and dignity.	• equality • respect • dignity context	Baillie & Matiti (2013)
Considering the direct contact between clothing and user, the information about anthropometric	• anthropometric • patients' needs	Das Neves, Brigatto, & Paschoarelli (2015)
Careful analysis on clinician characteristics, environmental factors, and other variables impede respect for patient dignity is well warranted.	• Attitudes • Action • Behaviour • Characteristic • Environment factor	(Henry et al., 2015)
Focus should not only be on codes and guidelines for the care providers, but on the entire health care system, and how dignity can be protected and enhanced through policies and organizational structures.	• System • Caretaker • Disabled elderly • Dignity protects	(Høy et al., n.d.)
To explore clinical nurses' experiences of caring for older patients. Besides, re-establishing a lost feeling of dignity is an important issue of caring for older people.	• Perspective • Explore • Feeling • Experiences	(Hall & Hoy, 2012)
order to improve their quality of life and the researchers designed the garments for PD patients considering comfort and ease of movement in addition to the better appearance	• Ergonomic • Fashion • Easy to move • Better appearance • Quality of life	(Mohamed, Nagda, & Mady, 2015)
Important to keep the concern for variables related to functional capacity, as well as the	• Functional aspect • Practical aspect	Araújo De Brito et al. (2016)

Table 2
Step 1- Sample of Attributes Collected from the Literature Reviews

THE KEYWORDS				
Attitude	Disability	Hygienic	Opinion	Simple
Materials	Sense of belonging	Adaptive	Self-expression	Dignity
Anthropometric	Dignity	Innovative	Potential	Stitches
Aesthetic	Design pattern	Influence	Protective garment	Standard size
Action	Development	Inclusive	Practicality	Sleeve
Ageing	Design process	Measurement (size)	Patients need	Standard design
Alteration	Emotion	Multifunction	Pattern Development	Sewing process
Behavior	Ergonomic	Modesty	Privacy	Satisfaction
Breathable	Easy to use	Multiple opening	Pattern technical	Technical drawing
Color	Fabric cut	Ease of use	Perception	Universal design
Comfortable	Functionality	Neck opening	Population	User friendly
Construction	Flexibility	Overlapping pattern	Patients perspective	Upper garment
Cultural view	Garment potential	Opening placed/area	Quality of life	Cognitive stimulation

Table 3
Step 2- Sample of Clustering Group (Shaari, Jamian 2016)



Results and Discussions

Through the process of sorting and clustering the keywords, results shows that KJ methods has successfully developed a product design criteria that can be used for the functional apparel design process with an approach of the new variables. (Dunne, 2004). From the data of group clustering, there are three different categories have been developed to be essential step 3 : chart making. It is a stable spatial arrangement based on understanding of cause and effect, interdependence, connection and contradiction. As shown in Table 4, affinity diagram based on garment design pattern, patient which represent the elderly and product appearance that should be included during the design process.

This affinity diagram was created based on the anticipated need for garments among the elderly. It is organized into three major categories: design, patient, and product criteria. All this step involves patterning of the 'families' into a consistent unifying chart(Scupin, 1997). Designing special garment for the elderly requires a deep understanding of the balance between the patient experience, design and product.

Table 4
Step 3-Chart making of affinity keywords based on the elderly garment

DESIGN		PATIENT		PRODUCT		
Pattern	**Sizing**	**Physical**	**Psychological**	**Function**	**Style**	**Practical**
• Adjustable • Front opening • Minimal placed seams • Wide neckline • Generous armhole dimension • Elastic waistband • Side or back adjustment • Material used • Raglan or drop shoulder sleeves	• Accuracy sizing • Elderly accuracy • Postural changes • Anatomical proportion • Expended size range • Inclusive grading • Articulated design • Expended length	• Patient opinion • Specific requirement • Type of illness and disabilities • Mobility • Range of motion • Ergonomic • Medical need • Ease of maintenance • Garment appearance • Ease of use	• Emotional comfort • Behavior • Preferences • Dignity • Self-esteem • Independence • Social inclusion • Adaptability • Cognitive challenges • Sensory • Cultural and personal values	• Ease of dressing & undressing • Adjustable features • Comfy • Ease of mobility • Hygiene • Medical access • Independence enhancement • Modesty • Easy maintenance • Versatility • Emotional • Social functionality	• Aesthetics • Adaptive • Minimalist • Simple • Ergonomic • Customizable fit • Special fabrics choice • Appropriate length • Fabric color choices • Cultural sensitivity • Love • Modest	• Practicality attributes • Comfort • Mobility support • Lightweight • Low maintenance • Adaptability • Safety features • Functionality • Temperature regulation (fabric choice) • Safety features • Functional • Value

Results above shows that through this understanding, the designers not only create garment that feel comfortable yet culturally appropriate respecting the preferences of elderly users. This will impact on promoting a sense of dignity and self-confidence. The context of *Ikigai* comply during the process of extracting and categorizing the keywords. Furthermore, the customizable fit and proportion that incudes adjustable features will enhances comfort, reduce frustration and fulfil the elderly needs. The proper selection of fabrics must be soft, breathable and provide comfort for the body and skin. The design that is minimal and easy to dress and undress , safety features, will be the priority in designing the elderly garment.

In terms of elderly practicality, the concept ease of wearing and movement, will facilitates ease of mobility and reduce the dependency of caregivers and enhance independence.

Practical solutions that fit to physical needs, improves comfort, safety and well-being in daily activities.

Designing Criteria: Integrating Ikigai into Elderly Fashion

Based on the above results, this study concludes that elderly garment design features can not only effectively enhance consumer satisfaction and emotional experience. Thus, the conceptual framework for this study have been developed through the various information gain from literature reviews and interviews. A conceptual framework is defined as a network or a blue print of linked concepts and the advantages of conceptual framework analysis are its flexibility, its capacity for modification, and its emphasis on understanding instead of prediction (Jabareen, 2009).

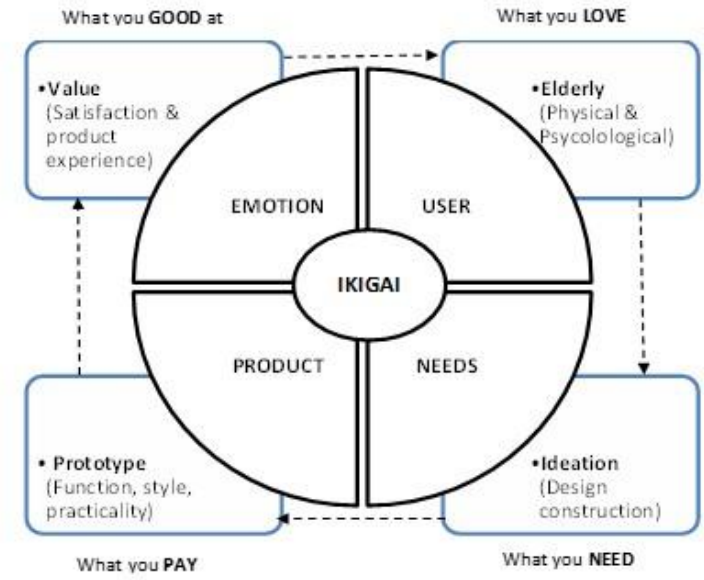


Figure 2: Elderly Apparel *Ikigai*-Infuse Conceptual Framework (IICF)

As mentioned in Figure 2, the deep infusion of physical and psychological context in the garment design process for elderly will fulfil ones Ikigai experience. This improved the elderly's sense of belonging while additionally improving their self-esteem in their daily lives. It can be divided into four basic sections: *Ikigai*, which represents the user, emotion, need, and product, are all necessary to complete the user *ikigai*. In order to fully comprehend what the elderly experience on a daily basis, only ideation and a model or prototype are required to depict the utmost level of elderly feeling when purchasing and wearing the products.

Designers are always challenged by complicated thoughts during their creative process especially special product such as elderly garment. The *Ikigai*- infuse conceptual framework (IICF) of design process offered the process of system thinking in establishing a specific strategy to understanding and solving challenges with elderly garments. It helps the designer in developing creative design thinking based on the building-up of ideas. Incorporating Ikigai into designing criteria involves understanding the elderly's lifestyle and aspirations, leading to clothing that is both functional and fulfilling. To achieve the *ikigai* in the products should consider the interconnection between, user, needs, product and emotion. This framework will fulfil the highest acceptance and satisfaction of user in purchasing the elderly apparel.

Incorporating *ikigai* into the design process involves understanding the seniors' desires and necessities, leading to co-created clothing that truly suits their way of life. By thorough research and involving seniors in the design process, designers can gain valuable insights that elderly clothing need a special design consideration that lead to more inclusive and effective products such as:

User-centered design: Implementing a user-cantered design approach is paramount when creating products for seniors. This involves understanding their needs, preferences, and limitations through user research.

Simple and easy: Senior-friendly products should feature simplified interfaces that minimize confusion. Large, easy-to-read fonts, clear icons, and intuitive navigation can significantly enhance the user experience.

Flexibility adjustments: Recognizing the diversity within the senior demographic, products should offer adjustable settings to accommodate various needs.

Embracing innovation: empowering the elderly to lead more fulfilling lives by technology driven products to make their daily lives more convenient, connected, and enjoyable.

Social connections: products should facilitate easy communication and connectivity with a simple and user-friendly, allowing elderly to effortlessly engage with technology for social interactions.

The specific design attributes for the clothing design is the most important criteria that highlighted in this research. From the conceptual framework the technical pattern on construction will be the main focused issue in the clothing development, design idea and design concept. It is to build a standard design based on specific technical drawing and pattern drafting that required the best pattern garment for the fabric cut process. It shows that, patients' opinion of the design, and from family members or caretaker in the center are the important information in fulfilling the special design for elderly.

Conclusion

This study is an interdisciplinary research addressing the *ikigai* philosophy and attributes data that interconnected with the user experience and emotion in elderly clothing; its scope encompasses a wide range of topics drawn from clothing design disciplines and anthropometric measurement disciplines. The study's key finding suggests that the framework would meet the important requirements in the design process that should notify fashion designers while designing elderly clothes. This discovery also significantly contributes to the highest levels of user acceptance and pleasure when wearing and purchasing elderly clothing. Incorporating *ikigai* into the design process involves considering the elders' physical and psychological demands, resulting in co-created apparel that is actually appropriate for their lifestyle.

From the conceptual framework we can describe that the multifunctional design can expose elderly with comfortability and satisfaction during using the garment as well as in daily treatment or routine. The patients' behavior and patient's emotion before or after garment

use are important factors in understanding their experiences. The potential functional and practical design keywords for the garment will result in a creative and useful design that explores common elderly body measurements. The garment's hygienic features, ease of use, and comfort will all contribute to its aesthetic and ergonomic worth, making it appropriate for older people with disabilities. The choice of appropriate clothing materials must be taken into account for purposes of the health standard or procedure, taking into account the patients' circumstances and surroundings. The core idea of *ikigai*, focusing on creating products that provide purpose and fulfillment to elderly users. When infusing the *Ikigai* concept to the design process, is to find a meaningful intersection between what you love, what you are good at, what the world needs, and what you can be paid for. Designers can create products that not only meet functional needs but also enhance emotional well-being. This approach ensures that the products provide a sense of purpose and fulfillment, aligning with the core principles of Ikigai. Those criteria as a guide for researcher to improve the existing garment.

In conclusion, the conceptual framework helps the researcher and fashion designer to identify the research gap issues that should be improve on the design construction from pattern technical garment, patients' needs on patients dignity also garment potential for practicality and functionality aspect for disabled elderly apparel. The highest consideration and knowledge of elderly needs will improve the maximum ergonomic design criteria for elderly apparel. Designing for the elderly, therefore, with the *ikigai* concept in mind is a great approach. It was an experiential sense that was best captured in *ikigai*, where the elderly in touch with his or her sense had hope and meaning in life. It focuses on designing goods that not only meet practical demands but also elicit emotion and create a sense of purpose, offering that elderly consumers feel fulfillment and joy in their daily lives.

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