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The Development of a Coconut Shell Product Prototype Based on Spiritual Beliefs for Cultural Value Enhancement: A Case of Samut Sakhon Province**

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Abstract

This research aimed to (1) study the spiritual beliefs and associated symbols that can be applied to the design of coconut shell products in the context of Samut Sakhon communities; (2) develop a prototype product set processed from coconut shells that reflect spiritual beliefs; and (3) assess the appropriateness of the prototype in promoting cultural value in the creative economy within the community. The study used research and development (R&D) methodology, comprising (i) a review of relevant theories and literature, (ii) field surveys, and (iii) interviews with community leaders to gather in-depth information on spiritual beliefs associated with coconut shells. Three main research instruments were used: (i) a semi-structured interview form for data collection on spiritual beliefs from community leaders and local wisdom holders; (ii) a design record form to document the development process of the prototype; and (iii) a product evaluation form on the developed prototype's cultural value in the creative economy, using a 5-point Likert scale. All instruments were validated by three product development experts, with Index of Item-Objective Congruence (IOC) scores ranging from 0.67 to 1.00 for the interview form and from 0.80 to 1.00 for the product evaluation form. Reliability testing was conducted with a pilot group of 15 participants, yielding a Cronbach's Alpha coefficient of 0.89, indicating high reliability and suitability for research purposes. The research findings were: (i) grains and natural-material containers play a significant role in spiritual belief rituals and can be meaningfully integrated into product design; (ii) the developed prototype--a *Sacred Grain Worship Set*--featuring coconut shell containers adorned with symbolic spiritual motifs; and (iii) the developed prototype product was evaluated by 55 participants including experts and community members, as aesthetically pleasing, aligned with spiritual beliefs, and strongly reflective of local identity. The evaluation results indicated the prototypes as highly appropriate, and the aspects related to spiritual beliefs and cultural

values as statistically significant at the 0.05 level. The obtained results of this R&D study point to a good potential in local product development based on spiritual beliefs in supporting the creative economy of the communities concerned.

Keywords: *Coconut shell, spiritual beliefs, product design, sacred grains, creative economy, cultural value, Samut Sakhon Province*

** The original title of the funded research project reads: “The Development of a Prototype Product Processed from Coconut Shells Based on Spiritual Beliefs to Enhance the Cultural Value and Creative Economy of the Community in Samut Sakhon Province”

1. Background of the Study

In contemporary Thai society, the spiritual belief system also known locally as *Mu-Thelu* has emerged as a prominent cultural trend, particularly popular among young generations and across various age groups. This belief system has apparently stemmed from economic hardships experienced by some groups, particularly new celebrities and those of comparatively low socio-economic status. As known to the public, their main belief lies in their wish for luck or better life by worshipping sacred entities or beings, give offerings in return, and publicize their activities and actions via social media. Such a trend has influenced consumer behavior, lifestyle choices, and purchasing decisions involving new products and services with spiritual or auspicious significance. At the same time, spiritual beliefs can serve as creative inspiration for product design and innovation, seamlessly connecting with the creative economy (Thongpandi et al., 2017; Srihapak & Boonmak, 2022; Krungsri Research. (2023).

Samut Sakhon Province is a major hub for agricultural industries and coconut-based processing. In particular, coconut shells--often considered agricultural waste-- possess significant potential for transformation into artisanal and artistic products. In Thai culture, coconut shells carry symbolic meaning, believed to provide protection and bring good fortune. Traditional practices, such as crafting *Phra Rahu* amulets or other talismans from coconut shells reflect valuable local wisdom with both spiritual and economic relevance. However, current coconut shell processing in local communities lacks integration with contemporary spiritual belief concepts that can convey spiritual energy in a creative and appealing way for modern target audiences.

This research, therefore, focuses on developing a set of prototype products made from processed coconut shells based on spiritual beliefs, aiming to enhance the cultural value and creative economy of communities in Samut Sakhon Province. The study particularly emphasizes the development of a *Sacred Grain Offering Set* that reflects the unique identity of Samut Sakhon, blending faith and functionality. The ultimate goal is to transform these innovations into creative economic products, increasing community income and establishing a renewed cultural identity for Thai coconut shell crafts in the present context.

2. Research Objectives

There were three research objectives:

- (1) To study the spiritual beliefs and associated symbols that can be applied to the design of coconut shell products in the context of Samut Sakhon communities;
- (2) To develop a prototype product set processed from coconut shells that reflect spiritual beliefs; and
- (3) To assess the appropriateness of the prototype in promoting cultural value in the creative economy within the community.

3. Literature Review

This section reports concepts based on previous studies: (i) spiritual beliefs, (ii) coconut shell products, (iii) product design, (iv) creative economy, and (v) the study's research conceptual framework.

3.1 Concepts Related to Spiritual Beliefs

The spiritual belief system is a combination of beliefs in the supernatural, amulets, and rituals, which can be interpreted through various dimensions. From an anthropological perspective, Edward B. Tylor proposed the concept of animism, which holds that natural objects possess spirits--a foundational idea behind modern beliefs in sacred items and charms (Tylor, 1871).

In terms of social psychology, spiritual beliefs function as a coping mechanism for uncertainty in life. Actions that coincidentally result in favorable outcomes are often attributed to lucky charms or talismans, aligning with B.F. Skinner's theory of Superstitious Conditioning (Skinner, 1948). From a sociological viewpoint, Émile Durkheim argued that beliefs and rituals serve as mechanisms for social cohesion (Durkheim, 1912). In Thailand, spiritual beliefs reflect a syncretism of Buddhism, Brahmanism, and indigenous folk beliefs, especially in the postmodern era. In summary, a spiritual belief or Mu-Thelu is not merely superstition but a cultural, psychological, and social construct shaped by changing times.

3.2 Concepts Related to Coconut Shell Products

The transformation of coconut shells into products stems from the principle of resource efficiency, which aligns with the sufficiency economy philosophy first introduced by King Bhumibol of Thailand in 1974. This philosophy emphasizes self-reliance and the optimal use of local materials, especially in agricultural contexts with abundant organic waste (Office of the National Economic and Social Development Board, 2004). This philosophy has evolved globally into the circular economy, which has gained attention since the 1990s. It focuses on waste reduction, resource reuse, and minimizing environmental impact (United Nations Environmental Programme, 1999). Simultaneously, sustainable design emerged, advocating for long-lasting, eco-friendly, and energy-efficient products. One influential idea in environmental product design is *Cradle to Cradle*, proposed by McDonough & Braungart (2002), which promotes designing products that emulate natural cycles, allowing them to be continuously recycled without generating waste. Moreover, the use of coconut shells in design is consistent with *Cultural-Based Design*, which emphasizes incorporating local identity,

traditional wisdom, and indigenous culture into product design to enhance uniqueness and cultural value.

3.3 Concepts in Product Design

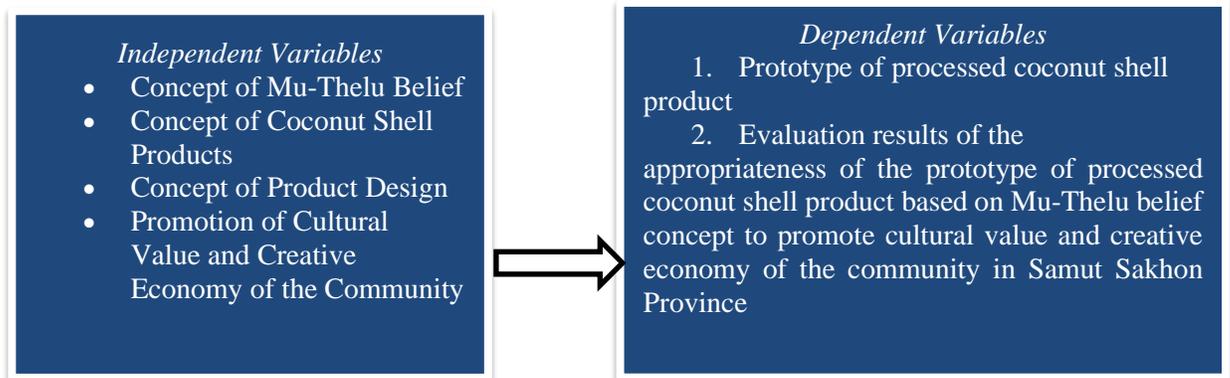
The field of product design began in the early 20th century, with German designer Peter Behrens, regarded as the first industrial designer. In 1907, he designed products for AEG, marking the beginning of integrating functionality, aesthetics, and brand identity. A foundational principle is “Form Follows Function,” introduced by Louis Sullivan in 1896, advocating that a product’s shape should reflect its purpose (Sullivan, 1896). This concept underpins modernist design, especially within the Bauhaus movement, which emphasized simplicity and mass production. In 1988, Donald Norman introduced the idea of *Human-Centered Design* through his book *The Design of Everyday Things*, stressing the importance of user experience and clear communication in design (Norman, 1988). Today, design thinking emphasizes sustainability, long-term usability, user identity expression, and sensitivity to both social and environmental contexts.

3.4 Concept of the Creative Economy

The concept of the creative economy emerged from the recognition of creativity as a driving force in economic development. Its foundation was clearly articulated by British economist John Howkins, who introduced the idea in his 2001 book *The Creative Economy: How People Make Money from Ideas*. Howkins defined the creative economy as a system that generates economic value from creativity, knowledge, and innovation, rather than from physical resources (Howkins, 2001). According to Howkins, the creative industries encompass sectors, such as arts, design, media, entertainment, architecture, fashion, and software, all of which share the common characteristic of being based on intellectual property. This concept has since been expanded and supported by global organizations by United Nations Conference on Trade and Development (UNCTAD). In its *Creative Economy Report 2008*, UNCTAD emphasized that the creative economy serves as a vital mechanism for sustainable development, contributing to job creation, income generation, and the promotion of cultural identity (UNCTAD, 2008).

3.5 Research Conceptual Framework

Figure 1: Research Conceptual Framework

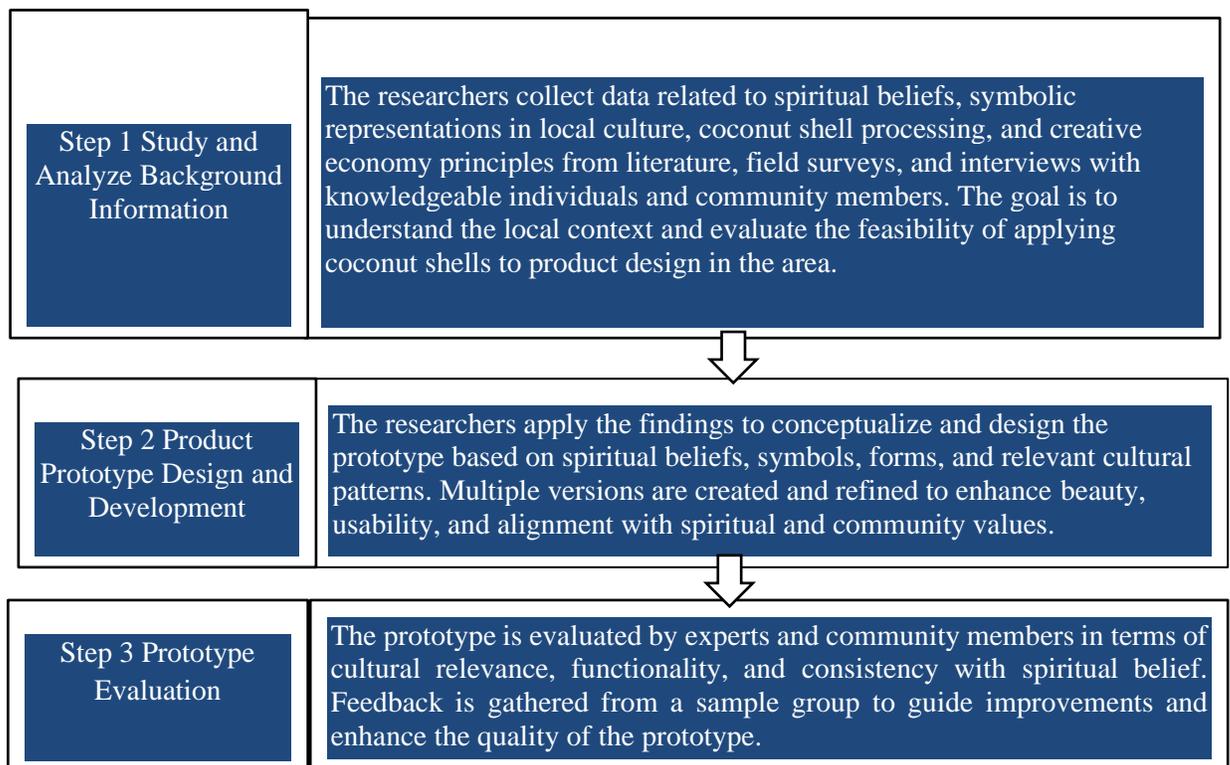


4. Research Methodology

4.1 Research Design

This research and development (R&D) aimed to develop a prototype of processed coconut shell products that integrates spiritual beliefs and local wisdom, followed by its evaluation for the appropriateness of the developed prototype.

Figure 2: Research Implementation Process



4.2 Sample Groups

This research used two sample groups as follows:

Expert Group

By purposive sampling, the researchers selected three experts based on specific qualifications relevant to product development and evaluation, regarding local wisdom, creative product design, and symbolic aspects of spiritual beliefs and sacred objects.

Community Members in Samut Sakhon Province

A total of 50 individuals were selected on a voluntary basis. They were part of small to medium-sized enterprises for prototype or conceptual evaluations requiring in-depth insights and quality analysis from target groups with specific characteristics.

4.3 Research Instruments and Instrument Quality Assessment

In this study, the researchers prepared instruments appropriate for research and development to cover both qualitative and quantitative data collection. The instruments correspond to all three research objectives as follows:

Instrument for Research Objective 1 on Preliminary Study and Data Analysis

The researchers used a semi-structured interview form to collect data from community leaders and local wisdom holders in Samut Sakhon Province. The interview content covered issues related to spiritual beliefs, symbols and their cultural meanings, the use of coconut shells in the local context, and concepts of the creative economy. The interview form content was validated for accuracy by three experts in product development, and the Index of Item-Objective Congruence (IOC) ranged from 0.67 to 1.00, indicating an acceptable level for practical use.

Instrument for Research Objective 2 on Prototype Product Development

The researchers used a design recording form to document the analysis process, design concepts, and prototype development of coconut shells. The spiritual belief elements, such as auspicious colors, sacred forms, and symbolic representations were integrated with local wisdom. The tools and materials used in prototype development included coconut shells, polishing and decorating tools, grains, UV dome coating tools, UV resin, and gold leaf sheets.

Instrument for Research Objective 3 on Evaluation of the Prototype Product

The researchers developed a prototype product evaluation form, designed as a 5-point Likert scale questionnaire, from 1 low to 5 high in respondents' opinions. This evaluation form content was validated by three experts in product development, obtaining IOC values ranging from 0.80 to 1.00. To ensure usability and reliability, the evaluation form was pilot tested with 15 relevant participants. The reliability coefficient (Cronbach's Alpha) was 0.89, indicating a high level of reliability and suitability for data collection from both experts and community target groups.

5. Research Findings

This section reports research findings in the sequence of three research objectives: (i) the spiritual beliefs and associated symbols that can be applied to the design of coconut shell products in the context of Samut Sakhon communities; (ii) a prototype product set processed from coconut shells that reflect spiritual beliefs; and (iii) the appropriateness of the prototype in promoting cultural value in the creative economy within the community.

5.1 The Spiritual Beliefs and Associated Symbols that Can Be Applied to the Design of Coconut Shell Products in the Context of Samut Sakhon Communities

Table 1: Interview Findings on Spiritual Beliefs and Associated Symbols that Can Be Applied to the Design of Coconut Shell Products in the Context of Communities in Samut Sakhon Province

Informant	Provided Information	Key Issues
Local community elder	When preparing offerings for monks or performing rituals, it is necessary to use auspicious grains placed in symbolic coconut shell containers. If broken or cracked, they must not be used, as it is believed to bring bad luck.	Auspiciousness= sacred power, protection, spiritual balance
Belief practitioner	Clients often request sets made from natural materials or sacred items. These must not be made from plastic or synthetic materials. Wood, coconut shell, or local plants from Thailand are more appropriate for spiritual symbolism.	Natural materials= reflect purity and spiritual power
Entrepreneur	Rituals require containers that are both spiritually significant and appropriate in appearance. Cracked coconut shells or those without symbolic patterns should not be used because they lack "spiritual integrity" and are unsuitable for rituals.	Producers must consider both spiritual and design aspects to make products usable in rituals

From interviews with community leaders, local wisdom holders, and individuals knowledgeable in spiritual beliefs in Samut Sakhon Province, the researchers found that the sacred grain offering set is considered a key component in rituals and spiritual beliefs practiced within the community. It is believed that grains, such as unmilled rice, mung beans, corn, glutinous rice, sesame seeds, and Job's tears represent life force, abundance, prosperity, and wealth attraction. The containers used for offerings are made from natural materials, particularly coconut shells, which symbolize purity and a connection to natural energy. Therefore, product design should emphasize both aesthetic appeal and symbolic meaning to fulfill both spiritual and market demands. Additionally, the product should be reusable.

5.2 Development of Prototype Product Set Processed from Coconut Shells that Reflect Spiritual Beliefs

The researchers utilized field data to develop a prototype product in the category of *Mu-Thelu Sacred Grain Offering Sets*. The design of containers and decorative elements was systematically created to reflect spiritual beliefs, including packaging and marketing media design as follows:

Process of Developing Prototype Products Processed from Coconut Shells Reflecting Spiritual Beliefs

Figure 3: Material Preparation Selection and Cleaning of Coconut Shells



Figure 4: Design and Prototype Production Process Based on Expert Recommendations through Community Participation in Samut Sakhon Province



Figure 5: Packaging Enhancing Spiritual Value and Aesthetic Appeal

From Figure 3, material preparation is considered the first and very important step in developing processed coconut shell products. The research team therefore placed importance on carefully selecting each coconut shell, considering the material, strength, and suitability for designing as an amulet or sacred object. The research team selected coconut shells that were complete, hard-shelled, without cracks or damage, and with shapes suitable for processing, such as semi-circular, round, or oval. The next step was cleaning. The research team began by washing them with clean water to remove soil or surface dirt. Then, the shells were soaked in hot water to reduce the natural odor of the coconut shell and eliminate bacteria that may remain on the surface. Next, a wire brush or fine sandpaper was used to scrub the shell surface for smoothness. The final step was drying, which is necessary to prevent moisture accumulation that may cause mold later. The research team sun-dried the shells or used an oven at appropriate temperatures to ensure the shells were completely dry, enhancing durability for product life.

As shown in Figure 4, the research team studied expert recommendations on beliefs and design in selecting appropriate grains for the prototype product set, such as rice and corn (abundance), mung beans (growth), black sesame (stability and wealth), and Job's tears (life energy). In the prototype design process, the research team and the community placed the grains into carefully processed coconut shell containers, decorated with auspicious symbols to be used as ready-to-offer worship sets.

From Figure 5, it can be seen that a strong rectangular box was designed with a clear window to clearly show the product inside. The use of dark purple contrasted with gold reflects power, wealth, and sacredness according to spiritual beliefs. There are also images of deities, such as Phaya Naga (Serpent King), Thao Wessuwan (Demon), and Ganesha (God of Success), which help create an atmosphere of faith and stimulate confidence in the positive energy of the product. The research team designed the communication of belief value alongside the packaging by attaching documents or brochures explaining the meanings of the patterns and symbols appearing on the box, such as the meaning of each type of grain, proper worship

methods, and usage guidelines for sacred items, so that consumers understand the intention and can use the product properly.

5.3 Evaluation of the Appropriateness of the Prototype in Promoting Cultural Value in the Creative Economy within the Community

Table 2: Demographic Variables of Respondents Evaluating Prototype Products Processed from Coconut Shells

Category	Details
Group	1) Experts: 5 persons (9.1%) 2) Community members in Samut Sakhon Province: 50 persons (90.9%)
Gender	1) Male: 22 persons (40.0%) 2) Female: 33 persons (60.0%)
Age	1) Under 30 years old: 8 persons (14.5%) 2) 31-45 years old: 26 persons (47.3%) 3) Over 46 years old: 21 persons (38.2%)
Occupation	1) General workers: 16 persons (29.1%) 2) Farmers: 8 persons (14.5%) 3) Government employees (teachers/officers/local designers): 5 persons (9.1%) 4) Merchants/Handicraft entrepreneurs: 10 persons (18.2%) 5) Company employees: 10 persons (18.2%) 6) Others: 6 persons (10.9%)
Experience Using Spiritual Products	1) No experience: 6 persons (10.9%) 2) 1-3 years (22 persons) (40%) 3) 4-6 years (27 persons) (49.1%)

As shown in Table 2, out of a total of 55 respondents, the largest group was community members in Samut Sakhon Province, totaling 50 people (90.9%), and the expert group consisted of 5 people (9.1%), who played a role in providing in-depth information and evaluating the appropriateness of the product.

Most respondents were female (60%) and aged between 31-45 years (47.3%), which is a working-age group likely to be interested in spiritual products to enhance luck in life and business.

The most common occupation among respondents was *traders* (29.1%), followed by *entrepreneurs* and *craftspeople*, reflecting that the respondents were related to the production or distribution of community products and may further develop the prototype. In addition, it was found that most respondents had *experience using spiritual products for 1–6 years*, accounting for a total of 89.1%, indicating that this type of beliefs influences lifestyle and can effectively guide product development to meet target group needs.

Table 3: Evaluation Results of the Appropriateness of the Prototype Product Set Processed from Coconut Shells Based on Spiritual Beliefs

Belief in Spiritual Aspect Item	\bar{x}	S.D.	Chi-square	df	p-value	Interpretation
The product enhances good fortune and marketability.	4.38	0.64	33.102	16	0.005	Significant
Can be used as a sacred item in the home.	4.25	0.70	26.332	16	0.049	Significant
Color/form conveys auspiciousness.	4.42	0.59	34.612	16	0.004	Significant
Has spiritual power in real life.	3.90	0.84	19.901	16	0.027	Not significant
Suitable for spiritual-minded consumers.	4.31	0.66	28.90	16	0.021	Significant
Summary: The overall appropriateness in the aspect of spiritual beliefs had a mean score \bar{x} of 4.252, standard deviation (S.D.) = 0.207, Chi-square = 142.847, Chi-square = 28.569, Sig = 0.05, P-value < 0.05						

From Table 3, the analysis of the spiritual belief aspect revealed that, based on the respondents' opinions, the belief aspect was considered highly appropriate, with an overall mean score (\bar{x}) of 4.252 and a standard deviation (S.D.) of 0.207. The total Chi-square value was 142.847, indicating that the spiritual belief aspect showed a statistically significant difference (p-value < 0.05). When considering the three lowest p-values, which indicate the most statistically significant beliefs, color/form conveyed auspicious power with a mean score (\bar{x}) of 4.42, S.D. = 0.59, Chi-square = 34.612, p-value = 0.004, showing that the respondents believed the color or form of the product clearly conveyed auspicious power. Next, products for enhancing fortune had a mean score (\bar{x}) of 4.38, S.D. = 0.64, Chi-square = 33.102, p-value = 0.005, indicating that the respondents believed products used for offerings or enhancing fortune would bring good things into their lives. The suitability for the spiritual target market, with a mean score (\bar{x}) of 4.31, S.D. = 0.66, Chi-square = 28.90, p-value = 0.021, indicated that respondents found the product suitable for the target group.

Table 4: Evaluation Results of the Appropriateness of the Prototype Product Set Regarding the Coconut Shell Material

Coconut Shell Product Material Aspect	\bar{x}	S.D.	Chi-square	df	p-value	Interpretation
The material reflects the value of nature.	4.28	0.68	30.114	16	0.016	Significant
The container can be used in real life.	3.85	0.88	17.600	16	0.355	Not significant
The appearance is suitable for modern users.	4.18	0.70	27.902	16	0.033	Significant
The container is durable and strong.	4.22	0.65	29.431	16	0.024	Significant
The material is environmentally friendly.	4.20	0.66	28.900	16	0.021	Significant

Summary:
 The overall appropriateness in the use of the coconut shell material had a mean score (\bar{x}) = 4.146, standard deviation (S.D.) = 0.170, Chi-square = 133.947, Sig = 0.05, p-value < 0.05

As shown in Table 4, the respondents' opinions regarding the coconut shell material, was at a relatively high level, with an overall mean score (\bar{x}) of 4.146 and a standard deviation (S.D.) of 0.170. The total Chi-square value was 133.947, indicating that the opinions showed a statistically significant difference (p-value < 0.05).

The three lowest p-values, which indicate the most statistically significant levels of coconut shell material appropriateness in natural value, had a mean score (\bar{x}) of 4.28, standard deviation = 0.68, Chi-square = 30.114, p-value = 0.016, indicating that the respondents accepted that coconut shell material as a valuable raw material. Next, the material reflects sustainability at a mean score (\bar{x}) of 4.20, S.D. = 0.66, Chi-square = 28.900, p-value = 0.021, reflecting that the sample group believed coconut shell material can convey the concept of sustainability in terms of both the environment and the valuable use of natural resources. The third aspect was coconut shell reflecting sufficiency way of life, with a mean score (\bar{x}) of 4.22, S.D. = 0.65, Chi-square = 29.431, p-value = 0.024, indicating that the respondents viewed coconut shell as conveying the principle of sufficiency economy and a simple lifestyle.

Table 5: Evaluation Results of the Appropriateness of the Prototype Product Set Regarding Product Design Concept

Product Design Aspect Item	\bar{x}	S.D.	Chi-square	df	p-value	Interpretation
The design communicates beliefs clearly.	4.30	0.64	32.775	16	0.006	Significant
The symbols are consistent with auspicious meanings.	4.05	0.79	25.004	16	0.048	Significant
The shape is beautiful and modern.	4.10	0.75	26.332	16	0.039	Significant
Suitable for practical use.	4.22	0.68	29.003	16	0.026	Significant
The design is unique and attractive.	4.29	0.63	30.984	16	0.015	Significant
Summary: The overall appropriateness of product design had a mean score (\bar{x}) = 4.192, standard deviation (S.D.) = 0.113, Chi-square = 144.098, Sig = 0.05, p-value < 0.05						

Table 5 reveals that the respondents had opinions of the product design aspect at a relatively high level, with an overall mean score (\bar{x}) of 4.192 and a standard deviation (S.D.) of 0.113. The total Chi-square value was 144.098, indicating that the product design aspect showed a statistically significant difference (p-value < 0.05). The three lowest p-values, indicating the most statistically significant opinions, showed that the design communicates spiritual beliefs clearly, with a mean score (\bar{x}) of 4.30, standard deviation = 0.64, Chi-square = 32.775, and p-value = 0.006. The design is eye-catching, outstanding, and interesting, with a mean score (\bar{x}) of 4.29, S.D. = 0.63, Chi-square = 30.984, and p-value = 0.015, indicating

the importance of a design in attracting consumer attention through uniqueness and appeal. Suitability for practical use had a mean score (\bar{x}) of 4.22, S.D. = 0.68, Chi-square = 29.003, and p-value = 0.026, showing that product design suits real-life use in the target group.

Table 6: Evaluation Results of the Appropriateness of the Prototype Product Set Regarding the Community Cultural Value and Creative Economy Concept

Community Cultural Value and Creative Economy Aspect Item	\bar{x}	S.D.	Chi-square	df	p-value	Interpretation
Transmits local spiritual identity.	4.40	0.59	35.604	16	0.003	Significant
Promotes community pride.	4.35	0.60	31.223	16	0.009	Significant
Represents cultural value and spiritual identity.	4.25	0.64	26.501	16	0.041	Significant
Encourages local handicrafts and employment.	4.18	0.71	27.842	16	0.031	Significant
Develops creative economy in the community.	4.32	0.62	30.118	16	0.017	Significant
Summary: The overall appropriateness in the community cultural value and creative economy aspect had a mean score (\bar{x}) = 4.300, standard deviation (S.D.)= 0.086, Chi-square =151.288, Sig = 0.05, p-value < 0.05						

Table 6 reveals that the respondents had opinions on the community cultural value and creative economy aspect at a high level, with an overall mean score (\bar{x}) of 4.300 and a standard deviation (S.D.) of 0.086. The total Chi-square value was 151.288, indicating that overall, the opinions showed a statistically significant difference (p-value < 0.05). As for the three lowest p-values to identify the issues that the respondents most strongly agreed upon at a statistically significant level, *transmitting local wisdom* had a mean score (\bar{x}) of 4.40, standard deviation = 0.59, Chi-square = 35.604, and p-value = 0.003, indicating that the respondents emphasized the importance of products that can transmit local wisdom passed down from generation to generation. Next, *promoting income in the community* had a mean score (\bar{x}) of 4.35, S.D. = 0.60, Chi-square = 31.223, and p-value = 0.009, reflecting that community products can truly promote grassroots economy and increase income opportunities for local people. The aspect on *developing further into the creative economy* had a mean score (\bar{x}) of 4.32, S.D. = 0.62, Chi-square = 30.118, and p-value = 0.017, showing that the respondents considered community products can support creative economy as a path toward sustainable development.

6. Discussion

The research had three objectives on: (i) spiritual beliefs and related symbols that can be applied to the design of coconut shell products, (ii) prototype product development processed from coconut shells based on spiritual beliefs to promote the cultural value and creative economy of the community, and (iii) evaluation of the appropriateness of the developed prototype product set processed from coconut shells based on spiritual beliefs. The

study context was Samut Sakhon which is a province in the east of Thailand. This section discusses the major findings with reference to previous studies.

Spiritual Beliefs and Related Symbols Applied to the Design of Coconut Shell Products

From interview data analysis, it was found that such grains as unmilled rice, mung beans, and corn play an important role in spiritual rituals as symbols of abundance and fortune, especially in the context of local traders. At the same time, the containers used to hold the grains are equally important as the offering itself. Believers and entrepreneurs agreed that the containers should be made from natural materials, such as coconut shells, wood, or traditional Thai gold-plated metal, rather than common ceramic containers, due to the belief that natural materials can draw in natural energy and enhance positive power (Thongpandi et al., 2017; Srihapak & Boonmak, 2022). They also reflect Thainess and are connected to the local cultural context. In addition, entrepreneurs emphasized that the containers should be reusable to ensure sustainability and align with the belief in purity and avoidance of negative energy (Alumni Association of Nakhon Sawan Rajabhat Institute, 2020). It can be concluded that beliefs regarding sacred grains and auspicious containers made from natural materials are core elements that should be applied in the design of spiritual coconut shell products.

Development of the Prototype Product Set Processed from Coconut Shells to Promote Cultural Value and the Creative Economy of the Community

The research team emphasized high-quality coconut shells in terms of strength, shape, and cleanliness to ensure suitability for processing into sacred objects within the spiritual beliefs. The meticulous cleaning process was not only for physical hygiene but also to reflect purity, which aligns with the power of faith. Once the materials were ready, the process moved to design and prototype production. Three experts in product development emphasized auspicious grains, such as rice, sesame, mung beans, and Job's tears to be placed in finely crafted coconut shell containers. Each container, therefore, is not just an ordinary object but part of a ready-to-offer sacred worship set that reflects beliefs, meanings, and cultural refinement. As for packaging design, it tangibly connects the product to consumers through the window-box and symbolic communication via auspicious colors, deity images, and an explanatory leaflet. Such design was meant to fully convey its spiritual value and the producer's profound intention (Alumni Association of Nakhon Sawan Rajabhat Institute, 2020). All three steps are systematically connected--from material selection, belief-based design, to communication through packaging--together elevating the product from a local material to a sacred object of cultural, spiritual, and creative economic value (Srihapak & Boonmak, 2022).

Evaluation of the Appropriateness of the Prototype Product Set

The overall opinion level of the respondents' evaluation was high, divided into four aspects:

Spiritual Belief.

The respondents under study appeared to accept spiritual beliefs in a contemporary cultural context. To them, color and shape was not statistically significant, indicating differences in personal belief or interpretation, which should be considered in future product designs to meet the diversity of consumer needs. This finding is consistent with the concept of

spiritual beliefs in the supernatural, talismans, and rituals, rooted in the animism theory of Edward B. Tylor (1871), who believed that natural objects possess spirits. In psychology, B.F. Skinner (1948) explained that belief in talismans arises from associating coincidental positive outcomes with objects or rituals. Emile Durkheim (1912), in sociology, viewed beliefs and rituals as tools for social cohesion. Spiritual beliefs in Thailand reflect a blend of Brahmanism and folk traditions.

Overall, this belief system results from cultural, psychological, and social components evolving with the times and is consistent with the research of the Alumni Association of Nakhon Sawan Rajabhat Institute (2020), which focused on the main target group—handicraft community members in Hua Khao Taklee, who are producers and play roles in coconut shell processing. The secondary target groups may include nearby communities, supporting organizations, and consumers interested in local products that can be developed into income-generating careers. The study developed coconut shell accessories reflecting local identity, emphasizing beautiful, outstanding design with clear concepts to enhance value and market demand. This analysis aligns with the research of Srihapak & Boonmak (2022), who developed processed coconut shell products with a focus on beauty and uniqueness to increase value and consumer demand. The target group’s response to the prototypes demonstrated the influence of spiritual beliefs on behavior in choosing sacred objects for rituals.

Coconut Shell Product

The respondents’ opinions toward coconut shells as natural materials that reflect spiritual beliefs in abundance and positive energy. In the current Thai social context, consumers tend to value products that represent both resource sustainability and “spiritual beliefs. Such a trend aligns with the concept of utilizing coconut shells as efficient in the use of natural resources as part of the sufficiency economy initiated by King Bhumibol in 1974, emphasizing local materials and self-reliance (Office of the National Economic and Social Development Council, 2004). This idea has led to the circular economy, which focuses on resource reuse and waste reduction (United Nations Environmental Programme, 1999), alongside the sustainable design concept, which promotes long-lasting and environmentally friendly products. The Cradle-to-Cradle concept by McDonough & Braungart (2002) also proposed the importance of mimicking nature and reducing waste. It should be noted that the design of coconut shell products uniquely incorporates local wisdom and culture to enhance product value, as earlier emphasized by Sakda & Krueat (2018), on the use of natural materials in product creation to add value and generate income for communities.

Product Design

The respondents evaluated the design of coconut shell products at a high level, as clearly conveying spiritual beliefs and reflecting consumer demand for culturally meaningful products beyond external beauty. As seen in their responses, material shape, color, or symbolism influences user perception and psychological value. This point aligns with the research of Puangkumdaeng (2025), who studied *Lanna yantra* as spiritual art, and pointed out that yantras in the Lanna context do not only symbolize faith but also show patterns, shapes,

and elements with specific meanings for empowerment, protection, and mental balance for the holder. Coconut shells can be engraved with yantra patterns, using auspicious colors, or sacred shapes to psychologically empower the created item to meet belief-related needs. As shown in this research, the prototype product set demonstrated the user-centered design in a true sense regarding the arrangement of ritual elements, comfortable grip, or ease of worship.

Cultural Value and Community Economy

As for the transmission of local wisdom, the promotion of community participation, and spiritual-value products, the respondents evaluated these aspects at a high level overall. This reflects that coconut shell products have the potential to create multidimensional value at the community level. Consumers perceive value beyond beauty or functionality, with connections to local identity, community pride, and grassroot economic development. This is consistent with the concept proposed by Howkins (2001), which views the creative economy as a system that creates value from *ideas, knowledge, and innovation* rather than physical resources. It covers industries, such as art, design, media, entertainment, fashion, and software, all based on intellectual property. This concept is also supported by UNCTAD (2008), which focuses on the creative economy as a driver of sustainable employment, income, and cultural promotion.

In addition, the research findings are consistent with the study by Thongpandi et al. (2017), which examined the coconut shell product processing of a handicraft group in Phatthalung Province in the south of Thailand. It was found that coconut shell production has been continuously developed by applying knowledge to suit the modern market, particularly designing for contemporariness or adding functional use. Coconut shells are not merely waste materials but are *living cultural resources* that can be developed into creative products that increase value, pride, and income for the community. In this regard, Krungsri Research (2023) asserted that generations of Thai consumers tend to consume products with symbolic or spiritual meanings, especially when presented in the form of aesthetically pleasing and meaningful items. Such consumer perception points to the potential growth of the spiritual product market to continue in the digital economy and online platforms, suggesting a good opportunity for the prototype products as developed in this R&D research.

7. Implications of the Study

Based on the obtained findings, this R&D research found that spiritual beliefs applied to the design of coconut shell products can truly enhance the cultural and creative economic value of the community. Consumers place importance on spiritual meaning, beliefs in fortune, and design with sacred symbols. It means that products made from natural materials can practically meet the trend of sustainability, while community participation in the design process and production development can lead to opportunities for spiritual product enterprises, career development, cultural market expansion, and growth in the digital economy era.

8. Recommendations and Future Research

The researchers would like to support the development of coconut shell products in local communities, and recommend accessories of sacred items for higher market value and market segmentation. It is important that developed products require online platforms and branding linked to local culture.

Workshops on product development should be organized for community artisans to enhance product design with belief-based meanings and to update their knowledge of modern marketing skills. Collaboration with government agencies or academic institutions should be promoted to support production, sales channels, and income sustainability.

Future research should be expanded into various dimensions of the process and tool enhancement of product development. Assessment of cultural value to be embedded in developed products must be carried out from time to time to ensure product quality and consumer satisfaction. Training programs for designers and artisans also require research to provide relevant and effective follow-ups to guide communities into the right direction of spiritual product trend for now and beyond.

9. The Authors

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