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SHORT REPORT

Identifying Key Implication Factors to Influence the Approach and Promotion of the Sustainable Furniture-Sharing Platform in the Circular Economy in Bangkok, Thailand

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The rapid increase in the size of the population in Bangkok is one of the reasons for the swiftly increasing rate of furniture waste generated in the city which creates a significant negative impact on the socioeconomic environment. While most sharing platforms in Thailand are about sharing a ride, habitat, or hand tools; used furniture which often takes up large amounts of space in landfills is normally seldom considered as a potential value stream from the sustainability perspective. To help address this shortfall, a sustainable furniture-sharing platform that is open for all to use was designed to support sustainability practices by encouraging the use of second-hand furniture by individuals rather than them buying new. Consequently, this research investigates possible significant factors that affect the decision of likelihood of usage of the platform to widen the adoption and promotion of the sustainable sharing platform and other sustainability practices. Accordingly, the data collected via an online survey from research into developing a sustainable-sharing platform was analysed by correlation analysis to find out the relationship between possible factors. The findings provided insights which lead to four suggestions: 1) Have those in the younger generation as knowledge spreaders; 2) Have personalised channels and content for better engagement of each target group; 3) Have a reward program as an attraction for target groups who have less interest in the topic; and 4) Promoting activities that let users experience the platform is suggested to increase the likelihood of their usage of it in the future.

Keywords: Sustainability; Sharing Platform; User background experience; User behaviour; Decision making factors; Rewards program

Introduction

Cities are the main GDP generators in every region of Thailand. Bangkok, its capital city, has a population of around 19.4 million people, experiences around 3% annual population growth, and is presently ranked as the 16th largest of all the 39 megacities in the world (Brinkhoff, 2021). The incremental increase in its overall population, its urban sprawl, its level of economic performance, its urban consumption behaviour, and the immigration of foreign labour into it, are all contributory causes to its rapidly increasing waste generation (Pollution Control Department, Ministry of Natural Resources and Environment, 2019). The generation of high levels of waste, and the methods with which they are dealt with, can have significant social, economic and environmental impacts both now and in the foreseeable future. Therefore, solutions and plans to better manage and help control the massive growth of such waste to prevent it from threatening the sustainability of the city and its quality of life are necessary. The evolution of cities is resultant from millions of individual decisions taken over a wide range of time (Batty, 2008), which can also be how many sustainable social interventions gain traction (Wongwatcharapaiboon, 2020). There are many research and solution-driven initiatives undertaken to help meet the United Nations' Sustainable Development Goals (SDGs) that propose solutions to help reduce the environmental impacts of cities. In this case, two key matters are addressed as central components of the solution for the issue being investigated. These are: forming new knowledge to respond to the complexity of city challenges; and hastening the uptake of research-based urban knowledge and advice by practitioners (Acuto et al., 2018).

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When it comes to city development, one of the challenges that all cities are continually faced with is waste management. Thailand has been witnessing a growing problem with solid waste management and disposal for a considerable period of time. In 2019, Bangkok alone created about 10,706 tons of waste per day that was taken to landfill and only 180 tons of waste per day that was brought to be recycled (Thongthab, 2019). In addition to the reports of the rising numbers of people living in the Bangkok Metropolitan Region, and the increasing amounts of waste they generate, there is also the likelihood of increasing furniture waste being generated as people move in and out of the area. A recent survey by Bangkok Metropolitan Administration (BMA) revealed that over a 7-month period, more than 2,738 tons of large sized trash was generated, the largest portion of which (42%) was discarded furniture (Anonymous, 2019) (**Figure 1**). Consequently, furniture and home decorations are taken into consideration with regard to waste generation and the need to reduce this waste stream as such waste is usually burdensome and takes up large amounts of space at landfills.

In the era of digital transformation, it is undeniable that an application or an online platform can become a critical tool to support the creation of a sustainable social intervention. They can be used as high-speed communication channels to publicise the information and knowledge available on a topic, or as online places for gathering a group of people with common interests and shared objectives to brainstorm, share, perform and develop sustainable practices to create better futures. In accordance with the emerging circular economy and sustainability concepts, and with the support from the technical advancements from the digital era, people are getting a better awareness of key issues through both online and offline media that are promoted and supported by the private sector, public sector, and also individual influencers in society (Gesawahong, 2019).

The key concept of the circular economy is to solve or relieve environmental challenges by creating a more sustainable world, turning products at the end of their service lives to be resources for others, closing loops of linear production and consumption as much as possible (Valavanidis, 2018). In addition, its ultimate goal is to ensure that the added values found for products are maintained within the economic circle for as long as possible to avoid waste generation to landfill (Akanbi et al., 2019). Since the early 21st century, the circular economy concept has evolved to become a component of both better waste management and improved material resource efficiency. However, the sense of its industrial process can create the emotion of detachment in many members of the general public. In consequence, the sharing platform, one of the circular business models that aims to extend or increase the usage of the products that are inefficiently utilised through sharing or lending them to other people, is a way to build up a sense of association, make people feel related and come together to help solve waste management issues.

There is an emerging use of the sharing platform in everyday life as a place where people can share or donate their items to be goods or free goods for other people. For example: a ride-sharing platform that aims to reduce the idle time of individual personal vehicles; a habitat sharing platform to reduce the idle time of occupancy; a sharing platform for farm equipment or hand tools; etc. Many sharing platforms have already operated in either the online and/or offline markets in which each sharing platform concept can impact each aspect of the three pillars of sustainability – economic viability, environmental protection and social equity differently. However, due to unforeseen circumstances, the goodwill of some sharing platforms can rebound, as their offline activities may create waste to the environment despite their mission to reduce it (Zink, 2017). For instance, a bike-sharing platform that lets people book a bike via an application, pay a fee, use it, and then leave it at a bike station, or the user's destined end-point, so that it can be available for other people near the location to use it, can fall into difficulties. Many bike-sharing platforms are reported to fail in their operation or regulation, leading to asset-damage, excess operational costs (i.e. maintenance cost, relocating cost,

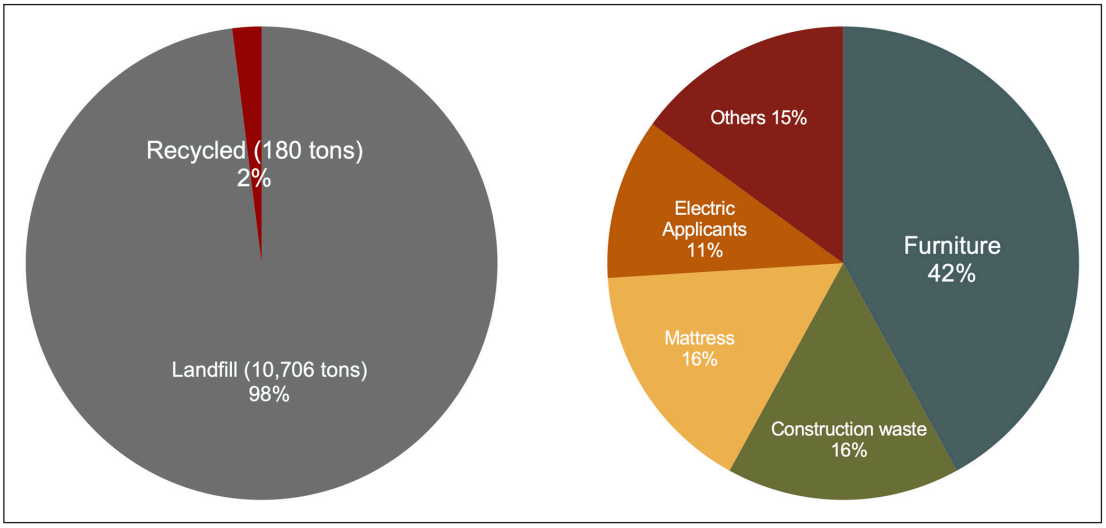

Figure 1: The end-destination of waste generated per day in 2019 (Left), and the proportion of large-size trash collected by BMA (Right).

etc.), and the overall shedding of millions of damaged bikes into landfills at end of business (Anonymous, 2018).

While some sharing platforms are questioned about their sustainability, and some have to end their business, others operating following the pillars of sustainability are still run in a good manner. For example, Shop Pan Kan is a shop and platform operated by a foundation in Thailand. It is open to receive donations from anyone. It is not like an ordinary foundation. It has an official website, a Facebook page, and a physical shop to deal with the shared and donated things it receives, including receiving requirements to pick things up. It also cleans the shared and donated things when necessary and ensures that they are used in suitable ways. For example, resale of cleaned clothes at the shop, finding the right place for the things that cannot be resold, such as old books that can be donated to remote schools, etc. It also donates to any appropriate campaign or project that needs support. To provide some metrics on its success, up till now Shop Pan Kan has saved more than three million pieces of potential waste from landfills and had over 400 thousand people participate on its platform (Yuvabadhana Foundation, 2021).

As a result, it can be seen that not all sharing platform that seek to enhance sustainability fail. The sustainable-sharing platform seems to have become a realistic possible solution for waste reduction in cities in this day and age, and also a viable potential ongoing solution to aid cities' sustainability objectives in the future.

With regard to creating a sharing platform that helps reducing waste to landfill and aims to be as sustainable as possible, the research undertaken for the 'Platform Design to Promote the Sustainable Material-Sharing in Circular Economy in Bangkok, Thailand' mainly focuses on the sustainable sharing of furniture and decorations and was conducted beforehand to find out the key success factors for creating sustainable-material sharing to support the circular economy and sustainability within Bangkok, Thailand. The design thinking process was used for the overall research framework of the project, reviewing related literature for more information, conducting quantitative research to collect the data from a large number of potential users, and conducting qualitative research through in-depth interviews to collect insights from some of the respondents from the online survey.

The findings of the literature review of previous research which was undertaken to help determine the key success factors for creating the sharing platform in sustainable practices can be concluded as: 1) The platform should contain features that encourage and balance all of the three pillars of sustainability as a driving factor (Geissdoerfer et al., 2017); 2) Attitude and background knowledge towards waste management, the informing period, and the emotion of 'ownership' are factors that affect the sustainability performance of each person (Chaiwat et al., 2019); 3) The user interface (UI) and user experience (UX) of the platform should best respond to the objectives of the platform and the user's expected needs (Garett et al., 2016).

As a result, processing throughout the design brief, the main key features in the platform are Sharing, Connect, and Content features (**Figure 2**). With regard to the design and sustainability concept, the Sharing feature was devised to give appropriate need-to-know information about the items offered, such as overall information, type of furniture, size, delivery method (pick up or shipping), and if it is broken what the receiver will need to fix after collection. The sharing in the platform may or may not be free which is up to provider consideration. In particular, the user experience of this feature is to make the user feel that they are in an online shopping application such as e-Bay where the provider can provide and upload all the required information by themselves, and both provider and user can freely decide how to proceed through exploring all the shared information on the screen.

With regard to the Connect features, these were designed to not just connect the provider-receiver but to also provide a one-to-one chat room as a contact room for more information and for following up the usage after adoption if needed. Moreover, they were designed to connect the related service providers such as a delivery man who has a big truck or van to transfer the furniture, a repairman for repairing items if necessary, etc. In addition, in order to

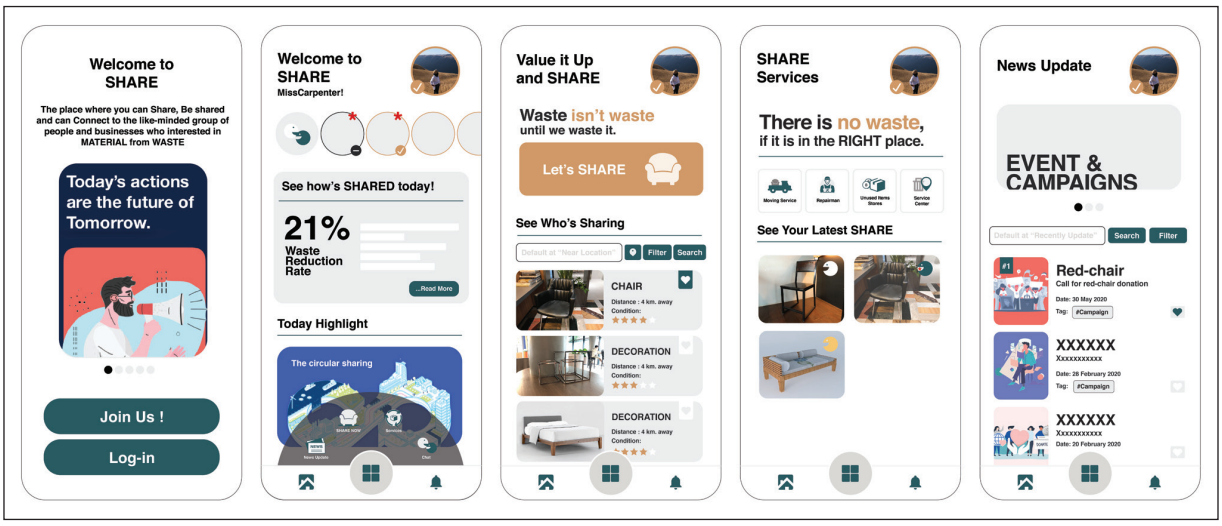

Figure 2: The prototype design of the sustainable-material sharing platform is composed of: Welcome page; Home page; Sharing features; Connect features; and Content features (as shown from left to right respectively).

support the right process of waste management, Connect also includes information on official dumping centres and second-hand stores. The benefits of this are that while the user can have more choice on whether to share, sell or discard, all decisions enable the waste to be in the waste management process, reducing the use of illegal dumping sites.

The Content feature, which was rated as the feature that least impacts the decision of using the platform, was designed for educating the users about related information. It provides feeds of information, news, or any interesting article about the Circular Economy and waste management to the user, such as tips for recycling or managing furniture waste or daily waste, etc. Moreover, this feature also gathers details of events and campaign lists about waste management, such as furniture dumping days, or donation campaigns so that the user can be prepared to join the event. Furthermore, the list of shared furniture and all service provider contacts will be preferentially displayed from those nearby to further away with the aim to reduce both the cost and the pollution resultant from transportation. Furthermore, the platform was also designed to require all the users, including any services providers, to register an account. All the users have to confirm their identity by One-Time-Password (OTP) and can gain credit of trust through their rating profile and services from other users in the platform.

Subsequently, from **Figure 3**, the feedback from the online survey that was undertaken resulted in 88.4% of total respondents indicating that they were 'Interested' in the platform concept and features. 49.3% of respondents said 'Yes' with regard to their likelihood of usage of the platform, and 64% stated that reward is necessary when sharing through the platform (Gesawahong, 2019). To some extent, the sharing platform concept is not a new idea as a Circular Economy and Sustainability concept in Thailand. It has however still to be developed to its full potential.

In order to achieve true sustainability, the authors believe that 'Waste management' or 'Sustainability' performers must understand and/or have a basic interest in the fundamental concept of what they are doing or going to do before they can do it right. In addition, it needs to be taken into account in this work that experience and/or background knowledge have been found to affect the understanding of what sustainability means and how a person adapts and applies the sustainability concept in their life (Wongwatcharapaiboon, 2019).

From a practitioner's perspective, and to create the most benefit from the findings of previous research, it was necessary to conduct further investigative work to seek out hidden possible significant factors that may affect the response, thereby widening the approach and likelihood of success for the sustainable-sharing platform and other sustainability practices. As a result, this research paper aims to offer a bottom-up solution, identifying key implication factors to influence the approach and promotion of the sustainable sharing-platform.

Methodology

Research was undertaken to investigate and reveal possible significant factors that may affect the decision on likelihood of usage of the platform, in order to widen the approach and promotion of the sustainable sharing-platform and other sustainability practices in the future. The quantitative research approach was undertaken through conducting an online survey as doing so enabled the gathering of data, ideas, and feedback from a high number of the chosen population.

The authors decided to use a Quantitative research approach. An online questionnaire was specially created to collect the raw data on aspects revealed to be of potential importance in previous research. It was decided in this work that the target user of the platform was to be people aged between 20–64 (Young adult – Middle-aged adult) staying in Bangkok Metropolitan Region.

Information on the number of people registered in Bangkok Metropolitan Region (BMR) was updated and retrieved online in December 2019 from Department of Provincial Administration, Official Statistics Registration Systems, Thailand. As can be imagined, the total number of people in that age-range and living in the BMR area that are interested to some extent in sharing left-over furniture or decorations in Bangkok is uncertain. Therefore,

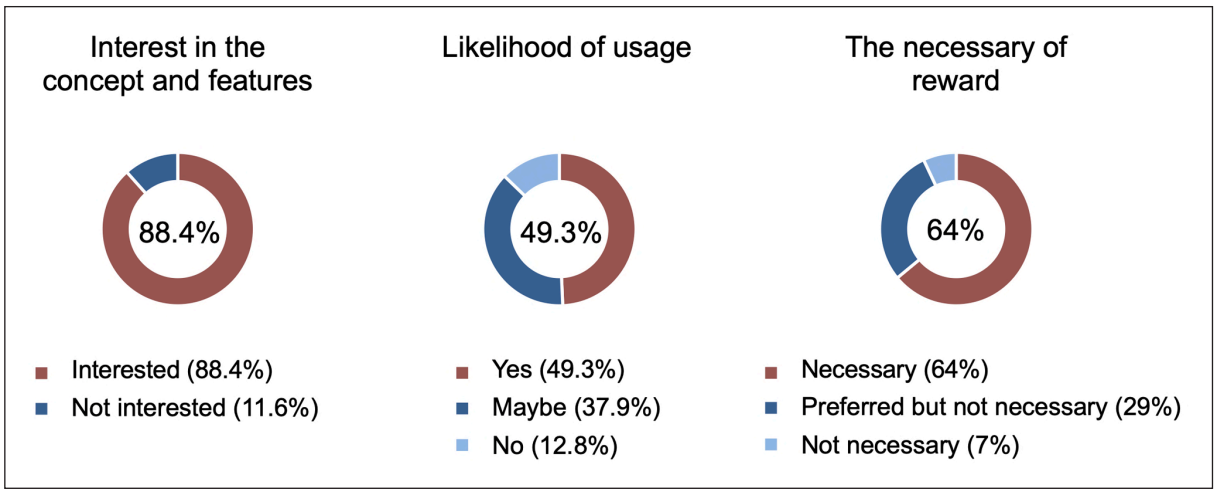

Figure 3: Percentages of interest in the platform concept, likelihood of usage, and the necessity of reward.

Cochran's formula was used to calculate the appropriate sample size. In this research 0.05 is used as the level of precision (e). Assuming the maximum variability is equal to 50% (p = 0.5) and has a 95% level of confidence with ±5% precision (z), the calculation sample size was: p = 0.5, q = 1–0.5 = 0.5, e = 0.05, z = 1.96. Therefore, the sample size required was 384.16 people. As data was obtained from 406 respondents, the target sample size was satisfactorily met.

The online questionnaire consisted of three parts. The first part asked about basic criteria in order to screen the target user, including determining their age and whereabouts they lived. The second part asked about their background and experiences related to waste management. The third part was divided into two halves. The first of these provided a brief of the prototype platform, its features and its functions. The second half asked for feedback related to level of interest in the proposed platform concept, likelihood of usage when the platform concept goes live in the real human environment, and the necessity of rewarding when sharing in the platform.

To obtain the new results, collected data were brought together and reanalysed to find out the relationships between factors and bring out any hidden insights. The quantitative data were first divided into three main groups which are: 1) Included demographics; 2) Background and experience; and 3) Possible decisions. The details of each of these groups is shown in **Table 1**. The data were then used to perform a statistical test using an SPSS program. The lead researcher applied Spearman's correlation, a non-parametric test that is used to measure the level of linear relationship between two variables, to find the association between factors and use the result of linear regression as a support statistical evidence of the finding of Spearman's correlation.

Typically, if the correlation coefficient value is between 0.00–0.19 it means its association is "very weak", 0.20–0.39 means "weak", 0.40–0.59 means "moderate", 0.60–0.79 means "strong", and 0.80–1.00 means "very strong" (Mathematics Education Centre, n.d.). However, as the social science qualitative measures of social factors tend to be inconsistent and frequently shifting, the measuring of the correlation coefficient can be lower than that for other sciences and can be ranged as follows: 0.70–1.00 means "very strong", 0.50–0.69 means "strong", 0.35–0.49 means "moderate", 0.20–0.34 means "weak" (but should be considered) and 0.00–0.19 means "very weak" (Senthilnathan, 2019). The calculated results obtained for the collected data are explained and discussed in the next section.

Results and Discussion

First of all, the authors would like to state the research limitations which may affect the results of this paper. **Figure 4** indicates the age distribution of all 406 respond-

Table 1: The list of sub-factors and factor details for each factor group.

Factor Group	Sub-factor	Factor details
Demographic	Age (A1)	Range between 20–44 years old
	Income (A2)	– Below 15,000 THB – 15,001–30,000 THB – 30,001–60,000 THB – 60,001–90,000 THB – More than 90,001 THB
	Gender(A3)	– Male – Female
Background and Experience	Knowledge test results (B1)	Range between 0–16 points
	Frequency of Waste Sorting (B2)	– Always – Sometimes – Never
	Experience of related content/media (B3)	– Yes (used to see related content/media) – No (Never see related content/media)
	Experience of using similar platform (B4)	– Yes (Have experience with some similar platform) – No (Never have experience with any similar platform)
	Experience of using similar business (B5)	– Yes (Have experience with some similar business) – No (Never have experience with any similar business)
Possible decision	The Necessity of rewarding (C1)	– Necessary – Preferred but not necessary – Not necessary
	Interest in the platform concept and features (C2)	– Yes/Interested – No/Not interested
	Estimated usage of the platform (C3)	– Yes/Will surely use the platform – Maybe/hesitate to use the platform – No/Will not use the platform

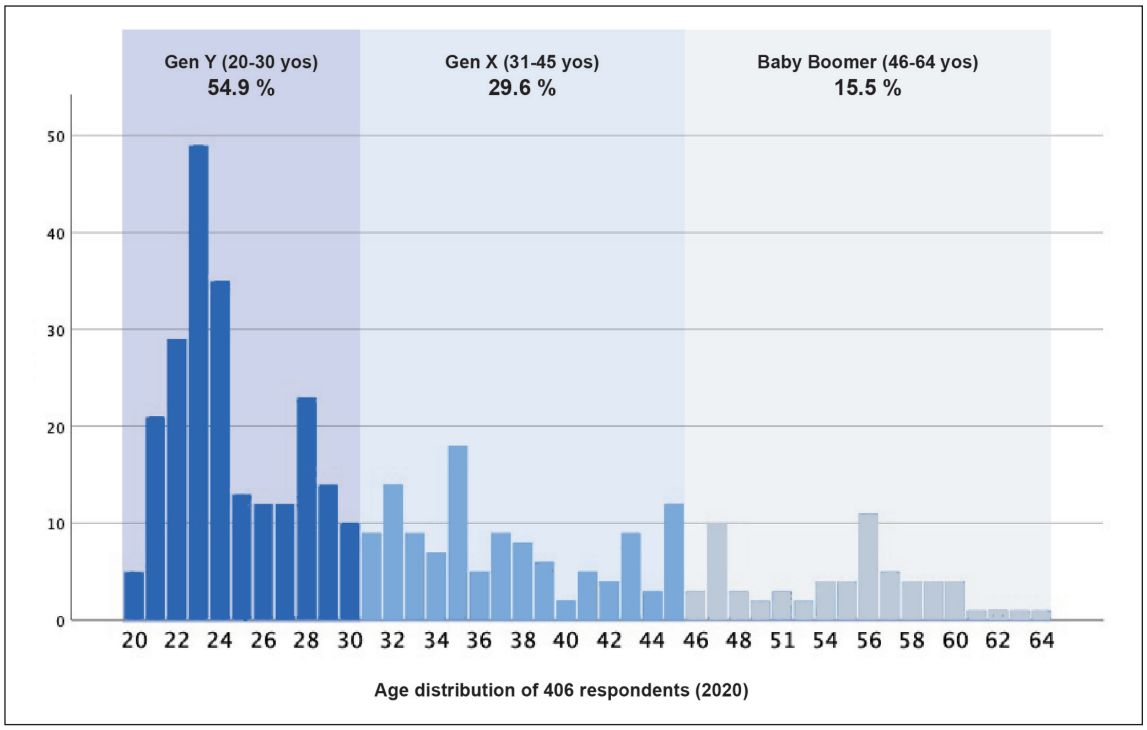

Figure 4: Age distribution of 406 respondents.

ents from the online survey. Most of the respondents (54.9%) are between 20–30 years old, followed by those in the 31–45 years old range (29.6%), and then those in 46–64 years old age bracket (15.5%), respectively. In addition, it is mentioned that as this research is undertaken from the perspective of social science, the result may differ from other sciences' measures. Even though the following correlation is significant at 0.05 level, some results of the research have a correlation coefficient that less than 0.2 with a low R square value at only 0.01–0.02 which is very negligible and should not be mentioned. Moreover, with regard to the fact that the concept of the sustainable-sharing platform and the circular economy are relatively new and very niche, they are known only some groups of people in Thailand. Furthermore, the research method was an online survey so the criteria for respondents was initially set for a wide range of a group of people, so the assumptions mentioned earlier may cause an effect on the results of the data analysis.

The results of the correlation analysis, which are shown in **Table 2**, indicate many correlations between each factor: both correlation within and between groups of factors. Overall, the results can be categorised as six groups of factors. The first three groups are the correlation within groups of factors: 1) the correlation of factors within Demographic; 2) Background and Experience; and 3) Possible decision. The second three groups are the correlation between groups of factors: 4) the correlation of factors between the category of Demographic and Background and Experience; 5) Demographic and Possible decision; and 6) Background and Experience and Possible decision.

Nest focus is given to the results for correlation between groups of factors that seem to have more complexity related to interpreting and underlining hidden insights. First, the correlation between Group 4, Demographic and Background and Experience, indicated the result that: 4.1) Age (A1) has a negative correlation with Knowledge test results (B1) at –0.279 (A1, B1); and that 4.2) Income (A2) has a positive correlation with Knowledge test results (B1) but has a negative correlation with Experience of the similar platform (B4) at 0.251 (A2, B1) and –0.169 (A2, B4), respectively.

Consequently, the result of 4.1) can be interpreted in two ways. Firstly, the younger participants in the online survey have more knowledge of the issue which may infer that the younger generation was taught/educated/made aware about the waste management issue more than the older generation. Secondly, supported by the correlation within Group 2 which refers to the correlation between the Experience of related content/media (B3) that relates to the Experience of the similar platform (B4) in a positive way, the present education and media that the younger generation is exposed to are often full of content and issues about the waste problem. So, the younger generation gradually absorbs the knowledge, becomes familiar with the issue, and tends to have an experience with the issue through online channels more than the older generation, who may not be familiar with online platforms and whose present living is farther from the educational environment.

In this case, the first insight can be concluded as the younger generation is proven to generally be the more effective change adapter and also the knowledge spreader to promote the platform or any concept that needs the understanding of basic knowledge in the topic area. At the same time, the result of 4.2 showed the higher rate of income link to better knowledge and also the link to the less rate of experiencing a similar platform which can be interpreted that people who have knowledge about some specific issues do not always have to experience or do the

Table 2: The correlation analysis between each factor in each group (P ≤ 0.05, N = 406).

Correlation		Demographic			Background and Experience					Possible decision		
		A1	A2	A3	B1	B2	B3	B4	B5	C1	C2	C3
Demographic	A1	Group 1										
		1										
	A2	.422*	1									
	A3	-.104*	0.096	1								
Background and Experience	B1	Group 4			Group 2							
		-.279*	.251*	.217*	1							
	B2	-0.011	0.021	0.063	.183*	1						
	B3	-0.053	0.011	-0.043	0.067	.099*	1					
	B4	0.074	-.169*	-0.077	-.277*	0.061	.145*	1				
	B5	-0.008	-0.057	0.008	-0.023	.133*	.132*	.219*	1			
Possible decision	C1	Group 5			Group 6					Group 3		
		0.057	-0.061	-0.084	-.325*	-.125*	0.083	.155*	0.005	1		
	C2	-.126*	-0.071	-0.013	.103*	0.065	0.032	-0.030	0.058	-0.050	1	
	C3	0.040	.134*	0.028	0.034	0.025	0.044	0.032	.110*	-0.012	.123*	1

*Correlation is significant at the 0.05 level

N = 406

activities that related to that knowledge. Moreover, supported from the correlation in Group 2 that the knowledge test results (B1) has a positive correlation with the frequency of waste sorting (B2) and has a negative correlation with Experience of the similar platform (B4) at 0.183 (B1, B2) and –0.277 (B1, B4) respectively. This demonstrates that the people who have more knowledge about waste management may perform waste sorting but may hardly perform waste management activities on an online platform.

In the interest of correlation in Group 5, Age (A1) has a negative correlation with Interest of platform concept and feature (C2) at –0.126 (A1, C2) which is interpreted as confirmation that the younger age, the more interest there is in the platform concept, becoming additional support for the first insight. Another one is that the Income (A2) has a positive correlation with the likelihood of usage (C3) at 0.134 (A2, C3), which means that the rate of income relates to the degree of hesitation when deciding on using the platform. Apart from the previous mentioned results, A2, C3 seemed to go against other findings, so it is left to discuss other evidence to support its idea later in this work.

For Group 6, which described the correlation between Background and Experience and Possible decision, it was firstly shown that the Knowledge test result (B1) has a negative correlation with the necessity of rewarding (C1) at –0.325 (B1, C1). Correspondingly, the frequency of waste sorting (B2) also has a negative correlation with the necessity of rewarding (C1) at –0.125 (B2, C1), and the Experience of using the similar platform (B4) has a positive correlation with the necessity of rewarding (C1) at 0.155 (B4, C1). From (B1, C1), (B2, C1), (B4, C1) with support tendency from (B1, B2) and (B1, B4), it can be interpreted that people with higher knowledge score (B1) that have more waste sorting frequency (B2) tend to agree that rewarding is not always necessary (C1) when sharing/receiving sharing things through the platform.

To acquire, engage and retain any user of the platform, giving a reward when sharing and receiving is one of the straightforward approaches to tempt people to share, giving the sense that a sharer has not lost anything but instead, getting something in return for their goodwill. On the other hand, for rewarding a receiver, it is also an approach that attracts more people to the platform to support adopting the concept of sharing and reusing things, expanding the number of platform advocates (Policella, 2020), and possibly to comfort the receiver in the case that the item received is not in 100% flawless condition. It is observed that, it is just a tool and not an obligation that a sharing platform must always have rewards. On the contrary, the correlation result of (B4, C1) indicates that the people who have less experience in using a similar platform (B4) tend to have less demand of rewards (C1), which possibly means that people who have more experience in using the similar platform (B4) may have more desire in rewards as well. Therefore, the second insight suggests that the background knowledge that someone has can be obtained from either their normal routine or their living environment (i.e. studying, working, surrounding content, etc.) or both of them.

In contrast, the normal routine of an individual can be influenced by their living environment as well. Besides, it has been proven that the people who have more knowledge about a particular issue may understand its concept more deeply than others, and that the level of experience

an individual has related to each specific issue is a factor that affects the decisions they make when experiencing that specific issue in the future. In the case of rewarding, the correlation result shows the possibility that more knowledge results in less demand of reward. So, the third insight is that the reward method can be used to attract attention from a group of users who may have less knowledge about that specific issue.

For another interesting correlation, the Knowledge test result (B1) has a positive correlation with the Interest in the platform concept and features (C2) at 0.103 (B1, C2). With support finding from Group 3, the Interest in the platform concept and features (C2) has a positive correlation with the likelihood of usage of the platform (C3) at 0.123 (C2, C3). As a result, the fourth insight can be surmised that the background knowledge an individual has affects the interest shown in the platform concept. On top of this, the interest in the platform concept also affects the decision to use the platform as well. Also, referring back to the correlation in Group 5, the correlation between Income (A2) and the likelihood of usage (C3) helps support the third insight as it is the connector between the finding of possible potential usage of the platform with other factors. As a result, the summary of the correlation of each factor is illustrated in **Figure 5**. It shows that the decision of likelihood of usage of the sustainable-sharing platform is directly affected by the interest of its concept and idea and also the income. Besides, even though it is an indirect correlation, the decision on the likelihood of usage is also affected and influenced by Demographics and Background and Experience as well. Additionally, with regard to the research limitations mentioned earlier on this topic, it is suggested that further in-depth research be conducted covering respondent criteria such as the number of respondents in each age range and/or income range, and the sample size expanded upon.

Conclusion

In conclusion, the research aimed to identify key implication factors that influence the approach and promotion of a sustainable sharing platform to support Circular Economy practices in Thailand. The findings indicate that there is a linkage of each of the factors investigated to the decision on likelihood of usage of the sustainable-sharing platform both directly and indirectly.

There are four insights found from the correlation analysis, knowledge of which it is suggested can become useful for influencing the approach, promotion, and potential user's initial behaviour on the sustainable-sharing platform: First, the younger generations are more familiar with the new knowledge and online channel, so that they can be change adapters and knowledge spreaders who promote the concept of the sustainable-sharing platform. Secondly, people who have more understanding and more experience in the specific issue typically tend to decide to experience that specific issue in the future. Furthermore, the background knowledge that one gains can be obtained from either their normal routine or their surrounding living environment or both of them. Moreover, the normal routine and the living environment influence each other as well. Thirdly, the rewarding method can be used to attract the attention of a group of potential users who may have less knowledge about that specific issue. Lastly, the background knowledge of the individual affects the interest in the platform concept, which at a later step affects the decision to use the platform.

Therefore, according to all four insights, the suggestions for promoting the concept of a sustainable-sharing

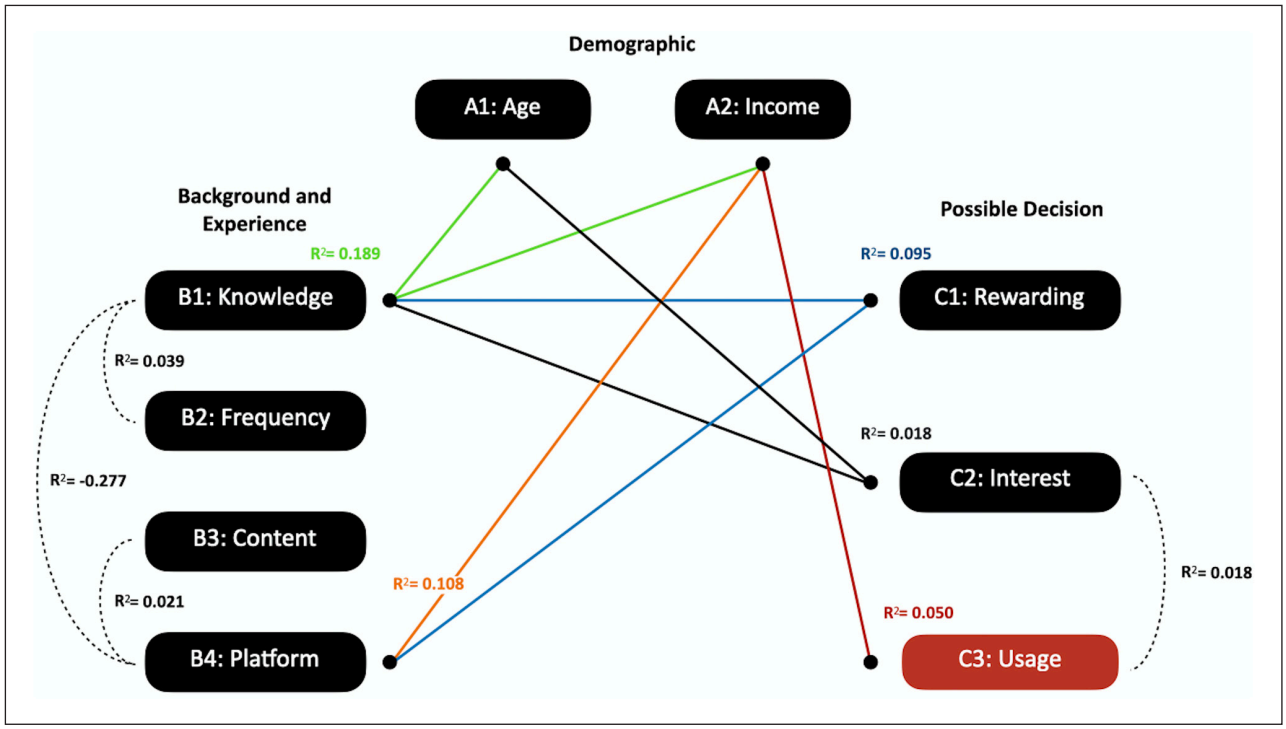

Figure 5: Summary diagram of correlation analysis.

platform can be concluded as listed: 1) The younger generation can often act as knowledge spreaders by educating and encouraging the older generation to use the online sustainable-sharing platform. 2) As the living environment or living conditions of the older generation may different and far from the educational environment of the younger generation, it is a confirmation that the promoter should select a promoting channel and the content that is close to the potential users' routine living, such as content that relates to work, family, health, etc., so that the potential users can better relate to it and absorb the information more easily. 3) Though rewarding is not required for sharing platforms; it is an interesting method to attract potential user attention. 4) The promoter is suggested to think about the activities that can let the potential user try or have an experience with the platform so that they can gain the basic knowledge on how to use it and may try the platform by themselves in the future. Anyway, with regard to the low value of correlation coefficient and R square obtained in this work, it is suggested that further research be undertaken with more specific criteria on respondents to provide more dependable results. In additions, a further research with higher age range is suggested to widen the market of sustainable-sharing application in the older age generation.

Therefore, aside from providing suggestions and guidance for promoting a sustainable-sharing platform in line with circular economy and sustainability principles, the authors believe that the research findings and suggestions given in this work can be of benefit to other researchers and/or practices that seek to strengthen the three pillars of sustainability – economic viability, environmental protection and social equity and wish to improve the sustainability of cities through efficiently cutting down on waste streams and adding extra levels of value to participants.

The authors believe that research findings can contribute to providing important background information to those who wish to create a sustainable furniture-sharing platform and show that there is a market and a need for it. Furthermore, it can be a fundamental research to those who wish to create any sustainable material-sharing platform apart from furniture and decoration as well. Besides, it can also be of benefit to those wishing to improve the viability of existing sharing platforms. In particular, the first group of users also tend to be those of the younger generation. Moreover, the platform concept which got an 88.4% response for 'Interest in the concept and features' can be a suggested add-on feature in existing sharing platforms that seek to be more sustainable and obtain increased levels of adoption.

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Competing Interests

The authors have no competing interests to declare.

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