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Reassuring Pro-Environmental Behaviour: A Goal-Framing Theory Perspective

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ABSTRACT. The rapid growth of the industrial sector and development projects is expected to impact the quality of the environment if stakeholders ignore the elements of environmental sustainability. There must be more than just enforcement to ensure pollution cases do not recur. Society needs to have a high environmental awareness and cultivate environmentally sustainable behaviour. This study examines the determinants of pro-environmental behaviour among university students. It uses the goal-framing theory to examine the influence of three goals (i.e., hedonic, gain, and normative goals) on university students' pro-environmental behaviour. Data was collected using convenience sampling of 400 university students. The data were analysed using descriptive and inferential statistics (multiple linear regression). The findings highlighted that hedonic, gain, and normative goals were positively related to pro-environmental behaviour. Moreover, the normative goal emerges as the most significant predictor of pro-environmental behaviour. The study concluded that conservation efforts should be at the core. If all members of society are responsible for playing their respective roles, the environment will be able to be saved and fully preserved. As practical implications, the study suggests public education, monitoring, planning, and enforcement as critical strategies to ensure the environment continues to be restored and preserved. The university should strengthen the frequency of students practising green practices through continuous activities or programs such as recycling workshops, product innovation competitions, environment lectures, and others.

Keywords: Gain goal, Hedonic goal, Normative goal, Pro-environmental behaviour.

INTRODUCTION

The speed of technology and development worldwide dramatically benefits and facilitates people, and a price must be paid along with modern development, which is environmental pollution (Yang et al., 2021). Environmental pollution is one of the environmental responses to humans. Pollution includes chemicals, noise, heat, light, and energy in the environment, resulting in destructive effects that endanger human health, threaten natural resources and ecosystems, and disrupt the environment's cycle (Gwenzi et al., 2023; Ulucak and Baloch, 2023). According to the Environmental Quality Act 1974, pollution is a change either directly or indirectly to the physical, chemical, biological properties, or radiation level of any part of the environment by releasing or placing waste to the extent that it may be harmful to human beings and other organisms (Agamuthu and Barasarathi, 2021). All pollution has a direct impact on human health. For example, air pollution leads to a lack of oxygen and ozone depletion, resulting in respiratory tract diseases, chest pain, and difficulty breathing (Ukaogo et al., 2020). In Malaysia, river water pollution that occurred in Sungai Kim-Kim in Pasir Gudang, Johor, pollution in Sungai Bertam, Tanjung Malim, Perak, and water pollution that caused the death of indigenous people in Kuala Koh, Gua Musang are examples of environmental

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tragedies. These tragedies are among the worst disasters ever reported in Malaysia. It should be a great lesson to all parties, and we must ensure that both sustainable development and the well-being of the environment are guaranteed.

United Nations Sustainable Development Goals (SDG) was established to emphasise the importance of protecting the environment and to encourage all countries to protect the well-being of the environment. For instance, SDG 13-Climate Action focused on urgent action to address climate change and its impacts by controlling greenhouse gas emissions and encouraging renewable energy development. On the other hand, SDG 14-Life in Water focuses on conserving oceans, seas, and marine resources for sustainable development (Arora and Mishra, 2019). Despite these efforts, over the past few years, there has been a deterioration in the quality of the environment. Earth's temperature has risen by an average of 0.14° Fahrenheit (0.08° Celsius) per decade since 1880, and 2022 was the sixth-warmest year on record based on National Oceanic and Atmospheric Administration's temperature data (Lindsey and Dahlman, 2020). As a result of environmental degradation due to human attitudes, experts in sustainable environment studies have highlighted the importance of pro-environmental behaviour. Pro-environmental behaviour is practised by individuals striving to make positive environmental changes (Farrukh et al., 2023). Self-confidence, motives, and commitment may influence an individual's desire to love their environment. Some individuals may be inspired to perform pro-environmental behaviour due to their self-identity and values related to their culture (Mansoor and Wijaksana, 2023). To promote pro-environmental behaviour among university students, higher learning institutions have implemented sustainable initiatives such as green awareness campaigns and sustainable energy, water, and waste management systems (Hansmann et al., 2020).

This study used goal-framing theory to examine the determinants of youth pro-environmental behaviour. It postulates that three-goal systems guide humans in processing information and selecting alternatives (do Canto et al., 2023; Farhat et al., 2022). Three primary goals could enable youth to act pro-environmentally. A hedonic goal frame refers to an individual acting due to how one feels in a particular situation, which typically has short-term implications. For example, buying green products provides pleasure or happiness to the individual. A gain goal influences human action and behaviour when it could affect resources such as money, time, status, energy, and others. Finally, a normative goal triggers behaviours with appropriateness and morality. Past studies have discovered that normative goals influence how people act pro-environmentally, while gain and hedonic goals often result in not acting environmentally sound (Grolleau et al., 2023; Jain and Rathi, 2023; Khan et al., 2023). However, some scholars acknowledge that behaviour may result from multiple goals simultaneously. Thus, this study examines the effects of gain, hedonic, and normative goals on university students' pro-environmental behaviour. This study holds significance for current literature and practice. It puts forth a much-needed new theoretical model that overcomes the shortfalls of existing frameworks (e.g., the theory of planned behaviour and the theory of reasoned action). It extends the environmental literature by contextualising individual perceived pro-environmental behaviour, especially in emerging economies. The subsequent sections present the literature review and hypotheses development, research methodology and findings, general discussion, conclusion, limitations, and future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The environmental crisis plagues the world today and causes various concerns to many parties. Environmental protection and restoration are significant challenges faced by the government and society (Gwenzi et al., 2023; Ulucak and Baloch, 2023; Yang et al., 2021). Behaviour towards the environment is defined as a deliberate action by an individual or group to influence environmental change directly or indirectly or to benefit the environment (Grilli and Curtis, 2021). There are several terminologies used concerning the concept of environmental behaviour. These include environmentally responsible behaviour, pro-environmental behaviour, environmentally significant behaviour, and sustainable behaviour. Pro-environmental behaviour includes recycling household waste, purchasing sustainable products, conserving water or energy, changing travel modes, and buying an electric vehicle. To promote pro-environmental behaviour among university students, many higher learning institutions have started to cultivate a campus culture with a sustainable mindset and behaviour through numerous activities and programs such as green awareness campaigns among staff and students, implementation of sustainable energy, water, and waste management system, green commuting, and the adoption of landscaping methods of green space on campus (Hansmann et al., 2020). Through a Memorandum of Understanding (MoU) between Universiti Teknologi MARA (UiTM), Affin Bank, and Yayasan Hijau Malaysia in 2022, the One-to-One Tree program was implemented simultaneously at the main campus of UiTM Shah Alam as well as the branch campuses. This ensures UiTM's commitment to national initiatives to maintain at least 50% of the country's land area covered with forested areas and trees. Moreover, as a critical entity in transforming UiTM into a sustainable green campus, UiTM Green Centre (UGC) has focused on six (6) key clusters: Setting and Infrastructure, Waste, Water, Energy and Climate Change, Education and Research, and Transportation. The university also was awarded ninth place among the 20 higher learning institutions in UI Green Metric World University Rankings 2020 (UIGM). These initiatives could help in developing staff-student partnerships on green campus initiatives.

The goal-framing theory has been referred to examine factors that influence pro-environmental behaviour among university students. The theory has recognised three goals (i.e., hedonic, gain, and normative goals) that could influence university students' pro-environmental behaviour. People in a hedonic frame are susceptible to what increases and decreases their pleasure and mood (Tang et al., 2020; Tchetchik et al., 2020). Hedonism is a term from the Greek language, Hedone meaning pleasure. Thus, hedonism is a lifestyle that focuses on finding unlimited pleasure and satisfaction (Van der Berg, 2020). Scientific studies prove that outdoor activities surrounded by natural greenery can reduce stress, refresh the mind, and restore body vitality (Roberts et al., 2020). For example, forest therapy is one of the methods practised in developed countries such as Japan, Europe, and North America in helping to reduce stress problems, and the forest is a place that can provide peace. This hedonic motivation has led to pro-environmental behaviour (Tang et al., 2020). Hedonistic behaviour is straightforward to find in the middle of society, but many do not realise that they are falling into hedonism (Van der Berg, 2020). Individuals with hedonic motivation have unsustainable environmental behaviour due to hedonism's characteristics (Williams, 2019). For example, they believed that the primary purpose in a person's life is personal enjoyment and pleasure and does not care about the interests and happiness of others. They might support green behaviour for pleasure rather than necessity.

Next, a gain goal frame will make people very sensitive to changes in their resources (Khan, 2019; Tang et al., 2020). For example, by recycling, they can save their financial expenses. Recyclable materials such as aluminium cans and newspapers can be sold to second-hand wholesalers. Many people nowadays are selling used cooking oil. The used cooking oil will be repurchased for RM1 per kilo. With the additional income of RM1 per kilo, it can be used again to buy new cooking oil at the supermarket. Shah Alam City Council, for example, has executed the activity of repurchasing used cooking oil from the public. Moreover, many people have started purchasing equipment with energy-saving and eco-friendly features, which can reduce costs (Mohamad et al., 2020). For example, with the benefits of LED lights in saving money, many households have started to replace compact fluorescent lamps (CFL) or fluorescent tube lights with LED lights. People with a gain goal frame are prone to perform pro-environmental behaviour if they perceive an improvement in their economic and social resources (Tang et al., 2020). The influence of economic resources has been extensively studied (e.g., Khan, 2019; Mohamad et al., 2020. However, the research on social resources could be more extensive. Social resources indicate that the individual is willing to perform pro-environmental behaviour if it could help them improve their social status (e.g., promotion, career development, and recognition) (Knickmeyer, 2020).

Finally, a normative goal activates all sorts of subgoals associated with appropriateness (Onwezen, 2023). People in a normative goal frame are sensitive and committed to a clean environment or showing exemplary behaviours (Yang et al., 2020). A normative goal can be associated with an individual with environmental values and ethics. Environmental values refer to the behaviour that people have toward the environment. They are determined by positive actions aimed at responsibly using natural resources and conserving, maintaining, and protecting the natural environment. Appreciation of pure environmental value in various religions and cultures will lead us to a civilised life, and indirectly, it acts as a catalyst for sustainable environmental behaviour (Tang et al., 2020). From ecological views, environmental morality strengthens our relationship with nature, and normative goal has been regarded as the most significant predictor of sustainable green behaviour (Feinberg and Willer, 2013; Grolleau et al., 2023). Empirical studies have found that normative goals significantly influence environmental behaviour (Liobikienė and Minelgaitė, 2021). This indicates that people in the normative goal frame are eager to perform sustainable environmental behaviour effectively and appropriately. However, a lack of studies has been carried out to examine this relationship. Nevertheless, empirical studies also have debated that humans cannot have only one motive, which could be influenced by many motives simultaneously (Hameed and Khan, 2020). In general, multiple goals may or may not be compatible, and this study hopes to deliver current research in environment study to address the research gaps and improve the theory. Based on the above discussion, we hypothesised the following:

H1: Individuals with hedonic goals significantly influence university students' pro-environmental behaviour

H2: Individuals with gain goals significantly influence university students' pro-environmental behaviour

H3: Individuals with normative goals significantly influence university students' pro-environmental behaviour

Figure 1 shows the research framework of this study.

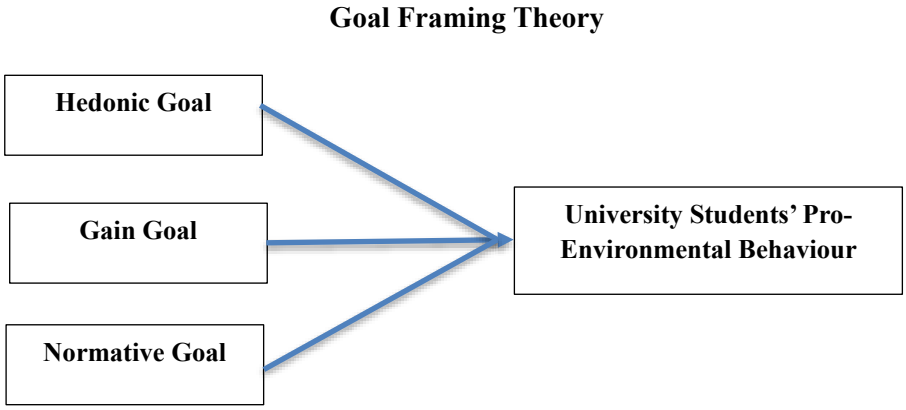

Figure 1. Conceptual model

METHODOLOGY

This study examines the influence of hedonic, gain, and normative goals on university students' pro-environmental behaviour. The research design used is a cross-sectional survey. The population of this study was UiTM students. UiTM is Malaysia's largest university, with 34 campuses, four colleges of studies, 14 faculties, and nine academic centres nationwide. UiTM has 166,070 active students. Using formulas by Krejcie and Morgan's (1970) sample size calculation, 384 study sample sizes were selected and can represent the total UiTM student population. Thus, using convenience sampling, 400 respondents were selected for this study. The survey questions were modified from previous studies. The questionnaire survey to measure pro-environmental behaviour was adapted from Blok et al. (2015). The items used to measure hedonic, gain, and normative goals were adapted from Chakraborty et al. (2017). Likert scale was used with 1-point representing "Strongly Disagree" whereas 5-points were represented as "Strongly Agree." All instruments of this study are suitable for use because the value of Cronbach's alpha coefficient for all four variables exceeded 0.80 (Gliner and Morgan, 2000). Apart from the reliability, the normality test is also applied using skewness and kurtosis. Kline (2005) suggests a kurtosis value of ± 1 is excellent for most psychometric uses, but ± 2 is usually sufficient. This study uses a deviation value of ± 2. Kline (2005) suggests the kurtosis range value is ± 10 for normal data. The results showed that the data obtained in the study is normally distributed. Table 1 shows a summary of the instruments used.

Table 1. Measurement of the variable

Variable	Item	Skewness	Kurtosis	Cronbach's Alpha
Pro-Environmental Behaviour	1) Air-Conditioning • I check whether the temperature is set correctly in the classroom. • I make sure that air-conditioning is off after the class. 2) Printing • I get as much print on both pages on one A4 sheet. • I try to get as much as possible to print two pages on one A4 sheet. 3) Drinking • I sustainably wash the mug using cold water and not washing up liquids. • I take a new plastic/carton cup each time I drink. • I use stainless steel straws when drinking. 4) Sustainable Shopping • I choose bio food when it is offered in a cafeteria on the campus. • I bring my shopping/plastic bag when I shop on campus. 5) Computer Use • I switch off my computer/notebook when I go home/hostel. 6) Light Use • I switch on the lights when I come to the class and switch them off after class. 7) Recycling • Glass • Plastic bottles • Batteries • Chemical office waste • Paper	0.062	-0.819	0.848
Hedonic Goal	• I feel happy when purchasing green products. • It is exciting to participate in environmentally friendly activities. • LED bulbs used to light our campus street and lawn provide security and pleasure. • The use of motor vehicles within the campus reduces the effort of walking.	-0.172	-0.390	0.812
Gain Goal	• Opting for sustainable courses and curriculum increases the span of career options. • Organic foods are preferred to avoid health hazards. • Reusing seniors' books helps me to save money. • Joining an environment-focused student group improves my image among peer groups.	-0.334	0.426	0.810
Normative Goal	• Energy and water conservation practices in educational institutions.	0.043	0.817	0.823

	• Green university culture improves the quality of life. • Students save the ecosystem by preserving natural resources. • Adoption of sustainable lifestyle and consumption pattern.

The collected data was entered into the study database using IBM SPSS Statistics 27 for analysis. Descriptive statistics (mean, standard deviation, frequency, and percent) and inferential statistics (multiple linear regression) are used to analyse and present the study's findings.

RESULTS AND DISCUSSION

In this study, a total of 400 sets of questionnaires were distributed. The researcher collected 311 questionnaires, 77.8 percent (%). Table 2 shows the distribution of respondents' profiles. This study involved 10.6% (33) male respondents while female by 89.4% (278). Out of a total of 311 respondents, it was found that the majority of 60.1% (187) were respondents who were 21 to 24 years old. Next, the study found that most of the respondents had taken a bachelor's degree education with a percentage of 75.2% (234), 18.6% (58) of respondents have a Diploma level, 4.5% (14) consisted of respondents with an education level of master's degree and 1.7% (5) of respondents at the PhD level. Regarding the course category, 88.7% (276) respondents were from social science, and 11.37% (35) were from science and technology backgrounds.

Table 2. Profile of Respondents

Variables		**Frequencies**	**Percentage**
Gender			
	Male	33	10.6
	Female	278	89.4
Age			
	18-20	89	28.6
	21–24	187	60.1
	25 and above	35	11.3
Program Level			
	Foundation	0	0
	Diploma	58	18.6
	Bachelor's degree	234	75.2
	Master's degree	14	4.5
	PhD	5	1.7
Course Category			
	Science and Technology	35	11.3
	Social Science	276	88.7

Table 3 shows the results of the Pearson Correlation test. Findings also show a positive correlation between hedonic goals and pro-environmental behaviour (r= 0.289, p= 0.000). Then, a positive relationship exists between gain goals

and pro-environmental behaviour (r= 0.389, p= 0.000). Finally, a positive relationship exists between normative goals and pro-environmental behaviour (r= 0.501, p= 0.000). Therefore, all hypotheses were accepted.

Table 3. Pearson Correlation Results

		Pro-Environmental Behaviour
Hedonic Goal	Pearson Correlation	0.289**
	Sig. (1-tailed)	0.000
	N	311
Gain Goal	Pearson Correlation	0.389**
	Sig. (1-tailed)	0.000
	N	311
Normative Goal	Pearson Correlation	0.501**
	Sig. (1-tailed)	0.000
	N	311

Table 4 displays a summary of the contribution model. The study's findings were conducted to examine the influence of hedonic, gain, and normative goals on pro-environmental behaviour. Multiple linear regression test shows that overall, the regression model is significant F (2,18) =23.980, p<0.05, with R^2 value = 0.734. Beta results indicated that the gain goal (β =0.277), (t=3.722, p<0.05) and normative goal (β =0.340), (t=2.280, p<0.05) are significant predictors of pro-environmental behaviour. While the hedonic goal (β =0.076), (t=-.006, p>0.05) is not a predictor because it exceeds the significant value. The variance inflation factor (VIF) and tolerance are closely related statistics for diagnosing collinearity in multiple regression. Multicollinearity is a situation that shows a strong correlation or relationship between two or more independent variables in a multiple regression model. If the value of Tolerance < 0.1 and VIF > 10, these can indicate the presence of multicollinearity. Based on Table 4, the data were free from multicollinearity issues.

Table 4. Regression Results

Variables	**Beta (β)**	**Sig. (p)**	**Tolerance**	**VIF**
Hedonic Goal	0.076	0.338	0.448	2.224
Gain Goal	0.277	0.000	0.519	2.756
Normative Goal	0.340	0.000	0.557	2.367
R^2	0.734			
Adjusted R^2	0.704			
F Change	23.980			
Sig.	0.000			

The findings highlighted that hedonic, gain, and normative goals were positively related to pro-environmental behaviour. Moreover, the normative goal emerges as the most significant predictor of pro-environmental behaviour, which is consistent with the findings from the previous studies (e.g., Feinberg and Willer, 2013; Grolleau et al., 2023; Liobikienė and Minelgaitė, 2021). This research offers several research contributions. This study proposes an empirically tested conceptual model and explains how the younger generation in emerging economies engages with pro-environmental behaviour in the light of goal frames. From a practical aspect, this study suggested several guidelines for the policymakers and relevant bodies. Various parties, including the government, producers, and non-

governmental organisations, must play a role in improving green and sustainable behaviour. The curriculum at the future primary and secondary school level is recommended to apply environmental education in the education system (Schmäing and Grotjohann, 2023). This initial stage is crucial for shaping individual behaviour as an adult. In this respect, the educator is vital in guiding and encouraging the younger generation to practice a sustainable or friendly way of life.

The government and relevant parties also need to create more campaigns to educate the public on the importance of pro-environmental behaviour through various channels such as letters, news, television, radio, exhibitions, and social media (Pan et al., 2023). For example, the Department of Environment of Malaysia launched an information delivery medium called Enviro Knowledge Management Center (E-KMC). The virtual information source contains various materials published by the Department of the Environment, such as annual reports, environmental quality reports, guidelines, books, modules, newspaper clippings, magazines, brochures, pamphlets, and others that can be easily accessed through their website. Extensive campaigns and strategies have yet to be made between responsible and relevant agencies and local universities. Only a few selected universities have been involved with the Department of Environment of Malaysia. Therefore, the Department of Environment of Malaysia needs to expand more linkages with all parties to ensure all Malaysians apply the environmental preservation norms. Multiplying programs involving celebrities in recycling campaigns and involving the community, such as schools, universities, and organisations, in carrying out awareness campaigns for environmental care is crucial. Campaigns also must be intensified throughout the country. Since social media channels have become sources of human-environment interactions and shaped the societal perception of environmental issues and awareness, the government and universities should utilise these platforms. For example, Instagram, Twitter, and TikTok challenge can be used for environmental activism.

As an authority, a paradigm shift needs to be taken to ensure the progress of the local community from time to time. The use of renewable energy sources should be introduced and strengthened in industries. For example, the use of solar energy as electricity in urban areas must be expanded to reduce dependence on electricity from coal and hydroelectric sources. In addition, both the private sector and non-governmental organisations should be more proactive in promoting environmentally friendly lifestyles. Private sector participation is crucial in achieving Malaysia's sustainable development goals (SDGs), which could also affect its corporate reputation (Noor et al., 2023). Universities are encouraged to practice and apply the concept of sustainability on campus. Sustainable campus development is essential to ensure the well-being of the campus community (Hansmann et al., 2020). The initiative to ensure that green practices are cultivated at all levels of centres and involve the entire campus community. The universities must take up the principles set in the UI Green Metric World University Ranking to achieve better sustainability and green transition on their campuses. The metric contains six main elements: setting and infrastructure, energy and climate change, waste, water, transportation, and education. Along with this, various green initiatives need to be promoted. For example, there is no polystyrene campaign, recycling activities, bicycle rebate, incentive scheme on campus, centralised parking, tree planting activities, and sustainable environmental management in administrative activities. Thoroughly various measures need to be implemented to ensure the preservation and conservation of the environment. Each party at each level should play their respective roles to achieve the objective of environmental sustainability (Noor et al., 2023). This initiative is a collective effort. Environmental experts need

to work together with the executive body in the country to find the best mechanism to ensure that our development and environment reach the best level.

CONCLUSION

The environment includes all living and non-living things, such as plants, animals, air, water, and soil. A polluted environment can cause health problems such as respiratory diseases, cancer, and others. Therefore, taking care of the environment is essential to preserve human well-being. The main objective of this study is to identify the role of hedonic, gain, and normative goals on university students' pro-environmental behaviour in a developing country. A hedonic goal person believes that caring for the environment can improve human life and that a healthy environment will provide beauty and comfort for humans. For example, a green and clean garden will make people feel more relaxed and happier. Next, for gain goal, these individuals feel that a healthy environment can be a source of income for humans (e.g., tourism and agriculture) and pro-environmental behaviour could help to reduce their spending. For example, a healthy environment will positively impact human health. Clean air, clear water, and fertile soil will make people healthier. On the other hand, if the environment is polluted, it will harm human health. Conversely, people with normative goals are committed to a clean environment. By taking care of the environment, they can prevent environmental damage, maintain ecosystem balance, and improve the quality of life. The study's findings highlighted that hedonic, gain, and normative goals were positively related to pro-environmental behaviour. Furthermore, the normative goal emerges as the most significant predictor of pro-environmental behaviour. Further research needs to widen the sample collection because this study involves students from UiTM only. Next, a longitudinal study must be carried out since a cross-sectional survey cannot provide information about causal relationships. In conclusion, the study's results help policymakers formulate the best policy for promoting pro-environmental behaviour.

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AUTHOR CONTRIBUTIONS

Nurul Hidayana Mohd Noor and Nur Batrisyia Nordin conceived and planned the research. Nur Batrisyia contributed to the interpretation of the results. Nurul Hidayana took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis, and manuscript.

COMPETING INTEREST

The authors declare that there are no competing interests.

COMPLIANCE WITH ETHICAL STANDARDS

Not applicable.

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