



The Empowering of Technology and Innovation for the Sustainability of Intangible Resources in Malaysia Through Open Distance Education

Chiam Chooi Chea¹

¹ Open University Malaysia, Selangor, Malaysia
chooi_chea@oum.edu.my

Abstract. Technology has “two sides of a same coin”. Technology and digitalization transformation are inevitable in the 21st century because it has been in every aspect of life, where 21st century is called a time period known as VUCA (Volatility, Uncertainty, Complexity, and Ambiguity), due to its robust, and dynamic characteristics. Rising technological wave such as Industrial Revolution 5.0 (IR 5.0), Generative Artificial Intelligence (Generative AI), smartphones, laptops, 5G network etc. has been galvanizing changes and innovation across the globe. Nevertheless, rapid development has caused several irreversible damages to the cultural and environmental aspect, such as global warming, environmental degradation, loss of natural and intangible living cultural values and resources, etc. Nevertheless, these issues could be better monitored and managed with technology, and educational efforts. This paper focuses on the benefits of intangible living cultural, using the stated preference approach, single-bounded contingent valuation method. A total respondent of 291 was collected for this study and the willingness-to-pay (WTP) for intangible living cultural by both users and non-users is estimated to be MYR7.19 per day with sociodemographic of income, education level and marital status are significant with the WTP for this study. The results of this paper would be able to provide an insight to various stakeholders on the adaptability, possibility of leveraging on the open distance educational digital transformation in empowering national intangible cultural resources in Malaysia.

Keywords: Technology and Innovation, Intangible Living Cultural, Open Distance Education.

1 Introduction

Technology advancement can have both positive and negative influence in the intangible national resource during the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) period. Technology leads to a VUCA environment because of current dynamic and competitive business environment, by reshaping and introducing new business models and awareness of intangible national resource issues in the 21st century, apart from opening doors for new possibilities with new approach, new issues concern, such as, easy tracking, better measuring of sustainability progress, ethical issues leading to

© The Author(s) 2023

Daryono et al. (eds.), *Proceedings of the 5th Open Society Conference (OSC 2023)*, Advances in Economics, Business and Management Research 263,

https://doi.org/10.2991/978-94-6463-290-3_3

a greener and circular economy. One of the national resources is the intangible resources that covers the aqua ecosystems, forest ecosystems, rivers, oceans, intangible cultural values etc. a nation possesses that brings numerous tangible and intangible values and benefits to a country.

Technology and development tend to have a positive relationship; advancement technology will lead to positive development of a country. Intangible resources have undeniable and evitable roles to a nation, and it has been continuously deteriorating and damage due to rapid development with high tourists' traffic, erratic weather change, natural disaster etc. However, intangible resource degradation or damage could be better monitored and managed with digital advancement, appropriate highlights, and efforts from various stakeholders.

1.1 The Roles of ODL in Strengthening Rural and Renewing Urban Livelihood

In recent years, there is a growing number of higher educational institutions have adopted e-learning as a prominent mode of education. Open and distance learning (ODL) has emerged as a widely embraced approach for continuing and advancing education. ODL provides learners with high degree of openness and flexibility, making it accessible to individuals worldwide. It has transformed the learning landscape in today's education sphere by catering to individuals from diverse social backgrounds and academic qualifications. ODL recognizes the value of informal learning and learning-by-doing, offering an inclusive opportunity for education to anyone seeking a second chance.

ODL serves as a beacon for lifelong learning, extending its benefits to individuals regardless of their location. Lifelong learning holds intrinsic value as it fosters a sense of connection with the world and enables individuals to enrich the lives of their loved ones. Therefore, ODL plays a pivotal role in offering a diverse range of academic courses, as well as courses promoting civic awareness, to learners. ODL serves as a potent tool for disseminating educational and awareness messages, capable of reaching a broad audience worldwide. It can also be employed to facilitate courses promoting intangible resources appreciation awareness.

The rise of globalization has sparked a need to change, adopt and adapt for survival by business in any and all nature. Change is an inevitable aspect, regardless of whether the community welcomes it or not. Open and distance learning (ODL) can be harnessed to educate and empower these communities by providing them with knowledge on new strategies and conveying important messages regarding government policies, among other topics. ODL serves as a valuable tool for equipping communities with the skills and information they need to navigate and adapt to a changing world.

1.2 Biodiversity

Biodiversity encompasses the full range of life on Earth, encompassing everything from genes to ecosystems. It includes the interconnectedness of evolutionary, ecological, and cultural processes that support and sustain life. Biodiversity is a vital and essential system for every country, where natural resources such as plants, animals, and other organisms, as well as climate and landscapes, interact to provide life-sustaining benefits. Unfortunately, these ecosystem benefits have often been overlooked and taken for granted, with the assumption that they will always be available and can be exploited for human needs. However, the natural landscape of an ecosystem within a country can be harmed in the name of "development," as there is always a trade-off involved in pursuing economic gains. Consequently, uncontrolled, and rapid growth without proper

development planning can result in further damage, potentially irreparable, to the natural ecosystem. The benefits derived from ecosystem services are crucial for human daily life, yet these services are not directly exchanged in the market.

Malaysia, being a tropical country, experiences a relatively constant mean annual temperature throughout the year. Ecosystem services refer to the benefits humans receive from the utilization of resources, such as land, water, vegetation, and the atmosphere, which result in essential goods and services like clean air, water etc. Ecosystems play a significant role as a crucial source of natural resources for a country. Malaysia, in particular, is abundant in diverse biological resources, with the forest ecosystem being a prominent example. Forests not only provide timber and forest products but also serve as a vital source of food and medicine for local communities through non-timber forest products. Additionally, water sources are integral to the overall ecosystem. All of these components contribute to the provision of ecosystem services within a country.

In most countries, rivers flow towards oceans, seas, lakes, or other rivers. Rivers serve as natural watercourses, primarily consisting of freshwater. Human activities utilize rivers for various economic sectors, including agriculture, logistics, and hydroelectric power generation through irrigation. Public rivers or oceans are generally considered public goods in an economy, exhibiting characteristics of non-rivalry in consumption and non-excludability. Non-rivalry in consumption means that the quantity of goods available for others to consume remains the same, regardless of how much one person uses. Non-excludability implies that the product can be used by anyone without restrictions. Due to these characteristics, public goods are typically managed by the government to address the "free-rider" problem. Despite rivers being vital components of a nation's healthy ecosystem, the services provided by rivers lack a direct monetary value.

1.3 Intangible living cultural

Intangible living cultural and intangible heritage is used interchangeably in this context and it is one of the is a national resource that gives an individual, society, and a country an identity and a sense of belonging and it has been under continuous threat of destruction due to the rapid technology advancement, where it changes the social and economic conditions for most countries around the globe. Despite the highlight of the issue over

the years and effort taken to mitigate the destruction, it still remains a challenge to overcome due to inadequate resources of the country. Intangible living cultural covers the customs, beliefs, practices, traditions, skills, buildings, architectural structures, and knowledge that are passed down from generation to generation and is constantly followed by a certain or specific community. It covers about how their past has formed them with their beliefs. Heritage represents the inheritance we receive from the past, shapes our present existence, and serves as a precious legacy we pass down to future generations. It encompasses both our cultural and natural heritage, which are invaluable wellsprings of life and inspiration that cannot be replaced [1].

Living cultural heritage represents the unique culture and historical aspects that define a community or even a nation. It encompasses intangible cultural values that encompass a broad range of elements. The impact of losing a cultural asset goes beyond just tourism revenues. It includes the loss of passive-use values associated with living heritage, which are not easily measured in monetary terms because they are not directly traded in the market. Living heritage encompasses tangible elements like buildings,

locations, and precincts, as well as intangible cultural aspects such as traditions, customs, and beliefs.

These benefits encompass the preservation of customs and the reinforcement of national identity, as well as the generation of tourism revenue for the country. The study utilizes a non-market valuation technique to assess the benefits of living heritage, which has been relatively underexplored in previous research efforts. Study on heritage also has been carried out using non-market approach in Malaysia [2]. Previous studies examining the valuation of cultural assets have exhibited considerable variations in terms of the goods, activities, and benefits considered. Despite ongoing debates surrounding the societal value of cultural heritage sites, only a few studies have examined their economic worth.

Heritage experts often perceive economists as lacking sensitivity and being excessively focused on financial measurements, thereby potentially overlooking the true cultural significance of heritage assets [3] In the context of public goods, when markets fail, the value of the goods in question is expressed through consumers' willingness-to-pay. The economic values associated with heritage represent the values that individuals recognize and are willing to pay.

1.4 Willingness-to-pay (WTP)

The concept of benefits, measured by willingness-to-pay, implies the presence of a demand curve for the positive effects of enhanced environmental quality. The total benefits can be calculated as the area under this demand curve. Estimating these benefits involves understanding the shape of the demand curve for intangible resources quality. Furthermore, Intangible resources can generate positive spillover effects, such as beneficial externalities. The main driver behind heritage conservation is often economic gain. Increased revenues from tourism contribute to local communities' ability to better preserve and protect their heritage. The economic benefits and interest generated by heritage tourism can also foster a greater appreciation of local culture among the community members.

1.5 Contingent Valuation Method (CVM)

The Contingent Valuation Method (CVM) is a survey-based approach that simulates a constructed or hypothetical market for the valuation of goods. The design of the questionnaire used in the survey holds significant importance in CVM. The term "contingent" in CVM refers to the fact that respondents are asked to state their willingness-to-pay (WTP) based on the specific conditions of the hypothetical market. The questionnaire typically contains comprehensive information about the current state of the non-market good, the hypothetical scenario illustrating the change in the environmental good, and the market in which it is hypothetically traded. The process of eliciting Willingness-to-Pay (WTP) using the Contingent Valuation Method (CVM) involves conducting a survey. Individuals are presented with questions regarding their WTP bids through different methods, including face-to-face interviews, telephone interviews, mail questionnaires, or a combination of these approaches.

Urban green spaces play a crucial role in mitigating the adverse effects of rapid urban development. Challenges like urban heat, health risks, and pollution are common issues faced by urban residents on a daily basis. Additionally, urban green spaces provide social, recreational, and educational opportunities for city dwellers. Decreasing availability of green areas and the potential misuse of land pose threats to this valuable space. Therefore, conducting an economic valuation is essential to ensure the preservation and establishment of Bukit Kiara as a valuable urban green space [4]. Meanwhile, [5] used CVM to measure the WTP for improvement in handling solid waste management in Bien Hoa and My Tho cities, Vietnam because management of solid waste is a major challenge in urban areas of most parts of the world, especially in developing countries. Several similar studies on WTP for improved solid waste collection services such as in Nigeria using [6], WTP for solid waste management in Macau [7], WTP for solid waste collection services in Uganda [8], WTP for waste management services in Bandar Lampung City, Indonesia [9], WTP and promoting solid waste management using CVM [10], WTP for improved urban solid waste management in Mekelle City, Ethiopia [11]. CVM approach is also used to measure the WTP for firefly conservation in Malaysia [12]. These studies show that CVM has been widely recognized and used in various countries to measure non-market goods and services but provides benefits to the people and nation.

1.6 The weaknesses of CVM

While the Contingent Valuation Method (CVM) is widely utilized for evaluating non-market goods, it does have certain limitations. One of the primary concerns arises from potential biases in respondents' answers, which can be attributed to survey design and implementation issues. In the context of the Contingent Valuation Method (CVM), it is widely recognized that the amount of information provided to respondents plays a crucial role in shaping their judgments of willingness-to-pay (WTP). Well-informed judgments tend to be more reliable compared to those based on limited information. However, an issue that arises in CVM pertains to the hypothetical nature of the market

for non-market goods. The hypothetical market does not represent a shared understanding between researchers and respondents.

A study highlighted [13] the key challenges faced in conducting CVM studies. These challenges involve designing scenarios that are sufficient, understandable, plausible, and meaningful to respondents, even if they lack experience with certain aspects of the scenarios. In CVM, even a seemingly straightforward question requires careful consideration of wording, format, content, placement, and organization to ensure accurate information elicitation. The authors also cautioned against underestimating the difficulty of developing a scenario specific to the chosen study site. While CVM is an important approach for valuing natural resources, it is not exempt from criticisms, particularly regarding its reliability, validity, and potential error biases. Cummings et al. (1998) identified five biases in CVM that need to be considered. The five biases in CVM are as follows: 1) strategic bias; 2) design and information biases; 3) starting point bias; 4) vehicle bias; 5) hypothetical bias.

2 Methods

A survey was conducted based on a total of 219 respondents using survey questionnaire. The questionnaire is divided into three sections. The first section consists of an introductory script, which the interviewer utilizes to establish contact with the respondents for the face-to-face interview as well as online survey. The interviewer introduces themselves, explains the purpose and objectives of the survey, and clarifies how the respondent was chosen. To aid the respondents in answering the questions, visual aids such as pictures are presented. They are then asked to make choices among the provided options. While online platform was used to disseminate the survey questionnaire to reach both the direct and indirect use of the intangible resources in Malaysia. Meanwhile, the second section is the elicitation of WTP value from the respondents and the third section is the respondents' demographic background.

The general equation for a logistic regression is as follows:

$$\ln(odds) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon_i \quad (1.1)$$

Where odds = probability of event/ 1- probability of event, $\beta_1 \dots \beta_k$ are estimated coefficient parameters, X_1 is the bid amount (price offered to respondents), $X_2 \dots X_k$ are independent variables that these variables can influence the WTP amount and ε_i is random distribution term. $\ln(odds)$ is the natural log of odds and it is known as "logit".

Based on equation above, the right-hand side is the independent variables and the intercept in a regression equation.

Predicted probability of “Yes” or “No” responses are calculated by:

$$P_y = P(Y = 1) = \frac{1}{1 + e^{-(\alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}} \quad (1.2)$$

Where Y=1 if a “Yes” response and Y=0 is a “No” response. Based on the equation in (1.2), it can be simplified as follows:

$$P_y = \frac{1}{(1 + e^{-z})} \quad (1.3)$$

Where $Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$

3 Results And Discussion

A total of 291 respondents were collected from mid of year 2022 to early of year 2023. This study reached the respondents via face-to-face as well as online survey. The use of questionnaire and survey via physical face-to-face interviews aims to reach the direct use respondents. Meanwhile, the online survey aims to reach both direct and indirect use respondents. Table 1 shows the socio-economic profile of the respondents for the studies conducted.

Table 1. Socio-economic Profile of the Respondents

Descriptions	Percentage (%)
Gender	
Male	39.9
Female	60.1
Marital Status	
Single	54.8
Married	44.0
Others	1.2
Education Level	
Secondary	8.6
Certificate/ Diploma	29.2
Degree and above	62.2
Age	
18-24 years	17.3
25-35 years	10.1
36-46 years	68.9
47-57 years	3.4
>58 years	0.3

Table 1 shows that there are slightly more female than male respondents for this study with approximately 60.1% and 39.9% respectively. On the other hand, there is a slightly more single than married and “others” in the marital status with approximately 54.8%, 44% and 1.2% respectively. Most of the respondents for this study possess at least a bachelor’s degree or higher compared to the other education levels with approximately 62.2%, followed by 29.2% with certificate/ diploma and then approximately 8.6% for secondary certificate holders. Meanwhile, as for the sociodemographic for age, the highest number of respondents are from the age group of 36-46 years old with approximately 68.9% followed by 18-24 years old and then 25-35 years old with approximately 17.3% and 10.1% respectively.

Table 2. Responses of first bid

Response	Percentage (%)
Yes	55.9
No	44.1
Total	100.0

Table 2 shows that approximately 55.9% of the respondents are willing to pay for the intangible resources in Malaysia and 44.1% of the respondents are not willing to contribute to the intangible resources in Malaysia. A bivariate logit model is used to estimate the regression equation. The logit model predicts the probabilities of “Yes” responses as a function of the offered bid amount (Bi), and other explanatory variables which will “No” responses. The reasons for more WTP value are because the respondents realized the importance of tangible resources to one’s daily life as to a nation because most of the respondents in this study are of working adults aged between 36-46 years old with a relatively high purchasing power and they would like the benefits of intangible resources are still available to their future generations.

Table 3. Final Logit Model

Variables	Model (Overall)
	B
BID	-0.000766***
Income_Annually	0.0000089227**
MaritalStatus_Married	0.457***
Education_Degree	1.06*
Constant	-0.153***

Mean WTP = RM7.91

***Significant at 1%, ** 5% and * 10% level

Table 3 illustrates the final logit model for the intangible resources during the study time period. The sociodemographic variables that are significant in this study against the WTP are income, education level as well as marital status. The results obtained for this study are consistent with several past studies such as studies by Becker et al. (n.d)

had significant WTP with marital status of the respondents; and Sakonnakon et al. (2012) had significant WTP with the respondents' income. Income has always been one of the major factors in determining one's willingness to pay. Married respondents tend to have higher willingness to pay because they value indirect and bequest values where they hope these intangible resources would be available for their future generations. On the other hand, higher education levels respondents tend to have higher WTP for intangible resources due to the fact that they realized the importance of tangible resources to a nation and the importance to manage it well and the importance of appropriate strategies and the advancement of technology to help manage its continuous degrading state. The bid value is in-line with the theory of utility as the higher the bid value the lower the willingness-to-pay by the respondents.

Table 4. Respondents' Perception with the Familiarity with Intangible Resources

Response	Percentage (%)
Very familiar	26.7
Somewhat familiar	50.7
Not very familiar	21
Not familiar at all	1.6
Total	100

Table 4 illustrates the respondents' perception towards the familiarity with intangible resources. When respondents were asked about their familiarity with intangible resources issues, 50.7% of them are somewhat familiar, 26.7% are very familiar, and 21% are not very familiar and 1.6% is not familiar with the current intangible resources' issues in Malaysia. This shows that most respondents in this study are somewhat familiar with issues pertaining to the intangible resources issues and policies.

4 Conclusion

This study uses single-bounded contingent valuation method in valuing several aspects of intangible resources in Malaysia. The interaction term was socio-economic profile of the respondents with the main attributes and the results indicated that the respondents have positive WTP. The estimated mean of the willingness-to-pay was MYR7.91 per visit. The findings also suggested that socioeconomic variables are important predictors of WTP in this study. The results have can provide insights to the respective authority bodies to formulate, proposed and implement appropriate plans, ways, strategies to help better manage and control the damage done due to development with the use of current and latest technology available. There is a need to also have regular exchange of ideas, transfer of technology ways that were taken by other countries successfully. Biodiversity is not a matter of one country, as in fact, it is a global matter as all countries are mutually dependent with each other from the perspective of climate change, deforestation, bleaching of corals etc.

Non-market valuation allows for the estimation of values that are not easily quantifiable in monetary terms. However, these values often tend to be disregarded or overlooked by policymakers due to the perception that they generate costs rather than revenue for a country. Non-market valuation studies often center around services, such as the provision of living heritage, which are readily available and often taken for granted. These studies can provide valuable insights into the conservation of living heritage by highlighting the benefits it brings to society, as measured by individuals' willingness-to-pay. By understanding the consequences of current policies on the long-term value of living heritage services, policymakers can make more informed decisions. The ultimate objective of economic valuation studies on living heritage is to facilitate this understanding and inform effective policy-making.

Apart from that, the importance of intangible resources needs to be instilled in the education syllabus to highlight the importance of intangible resources, environmental etc. to the learners. Open University Malaysia has introduced a module with a topic on environmental issues to its first semester learners with hope to produce graduates that are with strong civic awareness. Other than that, due to the advent of digitalization has profoundly transformed every aspect of life, and its growing significance cannot be ignored. The field of education has experienced notable changes, such as the introduction of online learning as an alternative to traditional brick-and-mortar education and the emergence of Generative Artificial Intelligence (Generative AI), among other advancements. In order to thrive in the 21st century, graduates must possess global competence and competitiveness. This presents a challenge for higher education providers to equip their graduates with the necessary skills and mindset to engage with and address global issues. Hence, it is a wise to leverage on the technology in education to spread the importance and awareness of intangible resources where it has a wide reach and scope globally.

The true value of intangible resources in every country has often been underestimated, as people tend to take them for granted. It is not until the loss of such resources and the impact of climate change become evident that their value becomes apparent. Despite the existence of policies aimed at preserving intangible resources, it requires the active participation of various stakeholders to ensure the successful formulation and implementation of appropriate strategies and policies.

References

1. *United Nations Educational, Scientific and Cultural Organization (UNESCO), World Heritage Convention*, 2023. <https://whc.unesco.org/en/faq/19#:~:text=World%20Heritage%20is%20the%20designation,generations%20to%20appreciate%20and%20enjoy>.
2. Ahmad Shuib and Nithanan Koshy Mathew, 'Capturing Heritage Value Through Innovative Mechanisms', *International Journal of the Malay World and Civilisation (Iman)*, 4 (Special Issue 1) pp.55-61, 2016, <http://dx.doi.org/10.17576/IMAN-2016-04SI1-06>
3. T. Loulanski, 'Revising the Concept for Cultural Heritage: The Argument for a Functional Approach', *International Journal of Cultural Property*, vol. 13, no. 2, pp. 207–233, 2006, doi: 10.1017/S0940739106060085.

4. M. I. Nur-Shafiza, M. A. Syamsul-Herman, and W. M. Wan-Norhidayah, 'Contingent Valuation Method for Urban Green Space: Case of Bukit Kiara, Kuala Lumpur', *Journal of Tropical Forest Science*, vol. 35, no. 1, pp. 20–27, 2023, doi: 10.26525/jtfs2023.35.1.20.
5. P. C. Chinh, N. T. Q. Hung, N. M. Ky, N. T. Le Ai, and N. M. Tam, 'Willingness to pay for improving household solid waste management in Vietnam', *Applied Environmental Research*, vol. 43, no. 2, pp. 1–14, 2021, doi: 10.35762/AER.2021.43.2.1.
6. O. Humphrey Francisco, 'Willingness to Pay for Improved Solid Waste Collection Services in A Commercial Centre in Sango, Nigeria', *Universiti Putra Malaysia, Masters of Science Thesis*, 2018.
7. Q. Song, Z. Wang, and J. Li, 'Residents' Attitudes and Willingness to Pay for Solid Waste Management in Macau', *Procedia Environ Sci*, vol. 31, pp. 635–643, 2016, doi: 10.1016/j.proenv.2016and online survey
8. M. James and N. F. Nabavubya, 'Assessment of Willingness to Pay for Solid Waste Collection Services in Uganda: A Case study of Kawempe Division', 2017. [Online]. Available: <https://ssrn.com/abstract=3177076>
9. M. Djayasinga and R. Virsa, 'Willingness to Pay (WTP) By Contingent Valuation Method (Case Study: Waste Management Services)', *International Journal of GEOMATE*, vol. 17, no. 62, 2019, doi: 10.21660/2019.62.
10. Jiachao Ke, Kaihan Cai, Yuan Wenyi, Jinhui Li and Qingbin Song, 'Promoting Solid Waste Management and Disposal Through Contingent Valuation Method: A Review', *Journal of Cleaner Production*, vol. 379, no. 1, 2022. <https://doi.org/10.1016/j.jclepro.2022.134696>
11. D. Hagos, A. Mekonnen, and Z. Gebreegziabher, 'Give to AgEcon Search Households Willingness to Pay for Improved Urban Solid Waste Management: The Case of Mekelle City, Ethiopia', 2014. [Online]. Available: <http://ageconsearch.umn.edu>
12. N. Rosli, Z. Samdin, W. Norhidayah, W. Mohamad, H. Farhana, and M. Muslim, 'Determination of Factor in Willingness to Pay for Firefly Conservation in Kuala Selangor, Malaysia using Contingent Valuation Method, Serangga, vol.26 no.2, pp.348-360, 2022. ISSN 1394-5130. file:///C:/Users/User/Downloads/45870-159571-1-PB.pdf
13. R. Cameron. Mitchell and R. T. Carson, 'Using surveys to value public goods: The contingent valuation method'. *Resources for the Future*, 1989.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

