DETERMINANTS OF EMPLOYEES' WORKPLACE GREEN BEHAVIOUR AMONG GREEN CHINA UNIVERSITIES: MEDIATED BY ENVIRONMENTAL PASSION AND SELF-IDENTITY

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by

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LIST OF ABBREVIATIONS

UNEP	UN Environment Program
CI	Carbon Intensity
GDP	Gross Domestic Product
HEIs	Higher Education Institutions
CGUN	China Green University Network
NASA	National Aeronautics and Space Administration
ESSL	Environmentally-Specific Servant Leadership
SOR	Stimulus-Organism-Response
SR	Stimulus Response
EWGB	Employees' Workplace Green Behaviour
COC	Collectivism-based Organizational Culture
GE	Green Empowerment
ESI	Environmental Self-Identity
EP	Environmental Passion
TC	Team Cohesion
HR	Human Resource
HRM	Human Resource Management

LIST OF APPENDICES

PENENTU PERLAKUAN HIJAU PEKERJA DALAM KALANGAN UNIVERSITI-UNIVERSITI HIJAU DI CHINA: PENYEDERHANAAN OLEH SEMANGAT ALAM SEKITAR DAN JATI DIRI

ABSTRAK

Tingkah laku hijau pekerja membentuk asas penting dalam menghasilkan pembangunan mampan dan manfaat jangka masa panjang bagi institusi pengajian tinggi di China. Isu pembangunan mampan dalam institusi pengajian tinggi mula mendapat perhatian yang meluas memandangkan institusi tersebut memiliki pengaruh sosial dan persekitaran penting terhadap masyarakat pada ketika ini dan masa akan datang. Walaupun terdapat pelbagai asas teori yang boleh dimanfaatkan untuk memahami kepentingan kemampanan, tingkah laku hijau pekerja pada peringkat institusi pengajian tinggi di China masih belum diterokai. Menerusi teori rangsangan gerak balas (SOR) dan teori kognitif sosial (SCT), kajian ini menguji model konseptual yang bertujuan meneliti peranan pengantaraan melalui semangat dan jati diri alam sekitar antara kepimpinan kebaktian khusus alam sekitar, budaya organisasi berasaskan kolektivisme dan pemerkasaan hijau terhadap Tingkah laku hijau pekerja dalam institusi pengajian tinggi di China. Kajian ini juga mengiktiraf kepentingan kesepaduan pasukan sebagai keadaan sempadan antara jati diri alam sekitar dan Tingkah laku hijau pekerja. Satu reka bentuk kajian keratan rentas dengan pensampelan bertujuan digunakan untuk mengumpul data daripada 385 orang pengurus peringkat pertengahan yang bekerja di institusi pengajian tinggi di China. Pemodelan Persamaan Berstuktur Melalui Kaedah Kuasa Dua Terkecil Separa (PLS-SEM) telah digunakan untuk menganalisis data. Dapatan kajian menunjukkan bahawa kepimpinan kebaktian khusus alam sekitar, budaya organisasi berasaskan kolektivisme

dan pemerkasaan hijau merupakan peramal penting bagi semangat alam sekitar. Sementara itu, budaya organisasi berasaskan kolektivisme dan pemerkasaan hijau didapati menjadi faktor penting yang mempengaruhi jati diri alam sekitar. Hasil kajian juga menunjukkan kesan pengantaraan oleh semangat alam sekitar yang ketara antara faktor-faktor tersebut dan Tingkah laku hijau pekerja. Implikasi kajian ini adalah penting kerana tingkah laku hijau individu di tempat kerja merupakan satu daya yang membolehkan institusi pengajian tinggi mencapai pembangunan mampan. Lebih banyak tingkah laku hijau boleh diamalkan dengan memupuk kualiti kepimpinan kebaktian khusus alam sekitar dalam kalangan pengurus, membentuk budaya berasaskan kolektivisme dalam organisasi dan memperkasakan pekerja ke arah isu-isu ekologi. Penyelidikan ini juga signifikan kerana kajian tentang jati diri dan semangat alam sekitar dalam konteks organisasi masih belum diterokai. Selain itu, penyelidikan ini turut menambah liputan kajian tentang kepimpinan kebaktian, budaya organisasi dan pemerkasaan dengan hujah bahawa faktor-faktor ini mempunyai potensi bagi meningkatkan semangat alam sekitar pekerja, lantas mendorong mereka untuk menunjukkan tingkah laku hijau di tempat kerja.

DETERMINANTS OF EMPLOYEES' WORKPLACE GREEN BEHAVIOUR AMONG GREEN CHINA UNIVERSITIES: MEDIATED BY ENVIRONMENTAL PASSION AND SELF-IDENTITY

ABSTRACT

Employees' workplace green behaviour forms an essential basis for obtaining sustainable development and long-term benefit for higher education institutions in China. The issue of sustainable development in higher education institutions has received an increasing amount of attention since higher education institutions have a substantial social and environmental influence on society in both the immediate and extended future. Although various theoretical foundations are beneficial in understanding the importance of sustainability, employees' green behaviour in workplace of higher education institutions has yet to be explored in China. Drawing from the Stimulus-Organism-Response theory (SOR) and Social Cognitive Theory (SCT), this research tests a conceptual model that seeks to examine the mediating role of environmental passion and self-identity between environmentally-specific servant leadership, collectivism-based organizational culture, and green empowerment on employees' workplace green behaviour within higher education institutions in China. This study also recognizes the importance of team cohesion as the boundary condition between environmental self-identity and employees' workplace green behaviour. In this study, a cross sectional research design with purposive sampling was used to collect data from 385 mid-level managers working in higher education institutions in China. Partial least structural equation modeling (PLS-SEM) had been employed to analyse the data. The findings reveal that environmentally-specific servant leadership, collectivism-based organizational culture and green empowerment were important

predictors of environmental passion. Meanwhile, collectivism-based organizational culture and green empowerment were found to be significant factors that influence environmental self-identity. Results also reported significant mediating effect of environmental passion between these factors and employees' green behaviour. Employees can do more green behaviour by developing the environmentally-specific servant leadership qualities of their managers, forming collectivism-based culture in organizations, and empowering their employees towards the ecological issues. This study carries value as research on environmental self-identity and passion in organizational context is still unexplored and this study extends the scope of servant leadership, organizational culture and empowerment research for arguments that these factors have potential to enhance employees' environmental passion leading them to display green behaviour in workplace.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides an overview of the current study. It starts with the background of the study why administrative staff's workplace green Behaviour in high education institutions is important to China, followed by problem statement which highlights issues related to research objectives and research questions. Afterwards, significance of the current research is discussed, which includes theoretical and practical contribution. In the end of this chapter, definitions of key terms are provided.

1.2 Background of Study

1.2.1 Sustainable Development for China

The World Commission on Environment and Development (1987) defined sustainable development as development that "meets the needs of the present generation without compromising the ability of future generations to meet their own needs". Natural catastrophes and public health problems triggered by global warming including heat waves, floods, forest fires, and infectious diseases epidemics, have become more common in recent years. The United Nations (2019) has reported that a 2°C temperature rise will lead to an increased frequency of heatwaves and the acceleration of sea level. The presence of these harmful environmental circumstances

highlights the urgent necessity for all parties to initiate action to mitigate environmental issues. How to actively reduce climate change became a worldwide consensus (W. Zhang et al., 2020). The latest report by NASA argues that the average temperature on earth has risen to about 1.62°F at the beginning of the 21st century, and this temperature increase has mostly been result of the increase in human greenhouse gas emissions (Bulut, 2021; M. S. Khan et al., 2020). International discussion focusing on climate change have devolved into a competition of countries' self-interests. In recent years, the problem of carbon emission peak and carbon neutrality has also become the central point of international climate discussion (Schmidt & Ockenfels, 2021). Problems of increased carbon emission, land deterioration, and pollution of air and water has cast serious doubt on the world sustainability (Otto et al., 2020; Steffen et al., 2018).

Based on the latest UNEP Emission Gap report 2022 (UN Environment Programme, 2022), in order to achieve the 1.5-degree target, there is a need to decrease emission by more than 50% around 2030, and strive for carbon neutrality in 2050. At the 2015 Paris climate conference, the Chinese government promised to guarantee a peak of CO_2 emission around 2030. This statement has been renovated nowadays to "endeavour to achieve the peak of carbon emissions by 2030". The new target which has been strengthened represents a challenged task and more responsibility particularly for the era of post-pandemic (Friedlingstein et al., 2020).

Nowadays, the new phase of Chinese economy has dawned which is slow growth (S. Chen et al., 2021) accompanied with high-quality development. The Chinese government has established a string of carbon intensity (CI) goals. In the Paris Agreement, Carbon dioxide emission of unit GDP by 2030 should be decreased to 65% below the level of 2005, and the aim has recently been increased to higher than 65%. China's CO_2 emission reduced by 48.1% in 2019 in comparison to that in 2005 (National Bureau of Statistics of China, 2022), achieving the reduced CI target of 40-45% by 2020 aimed in Climate Change Conference held in Copenhagen 2009. However, the decreasing portion of CI of many provinces in recent years was quite less compared to that of last five-year plan period. With the similar decreasing speed of CI, the achievement of carbon peak aim may be affected for China (J. Chen et al., 2022).

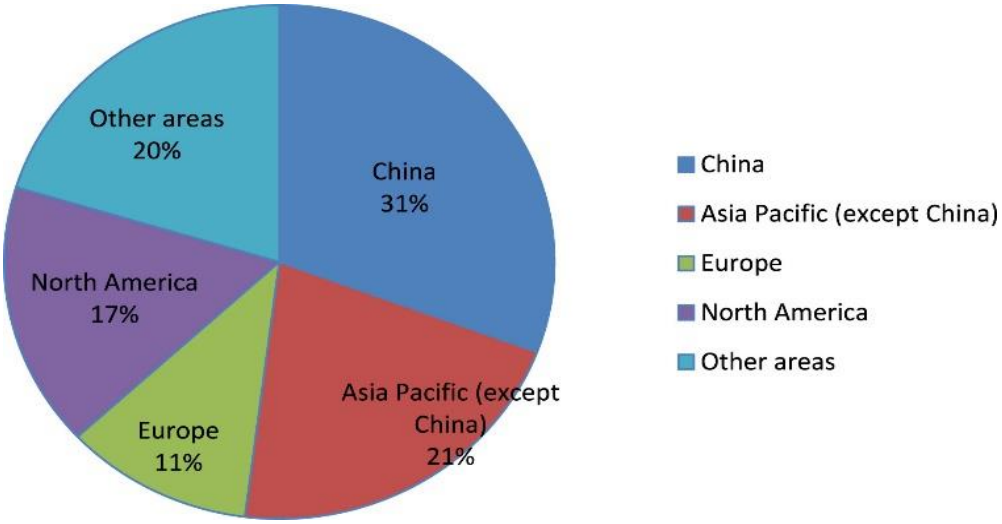
The achievement of the emission peak is an unavoidable challenge in the face of climate change for pursuing sustainable development. This target is not only an external necessity enforced by international negotiations related to climate change, but also an intrinsic requirement of China's environmental development and national transformation (J. Chen et al., 2022). It is undoubtedly a huge challenge for China to realize the aim of carbon peak and carbon neutrality.

The target of realizing sustainable development poses enormous and significant challenges across the world. China encountered with the same problem. Hence, Chinese government emphasized social sustainable development in every

"Five-Year Development Plan". With the popularization of low-carbon consciousness and the improvement of technology, China has adjusted to a more sustainable development plan than before. For the new era of China's economy, environmental protection has the equal significance with economic development in China. The pursuit of GDP growth is no longer at the cost of environment deterioration (J. Chen et al., 2022). While China's economic development has contributed to the improvement of Chinese livelihoods along with significant technical advancement, the country has moved away from the channel of sustainable development. Environment protection is not only critical for future generations (Dangi & Jamal, 2016).

The prominent and leading focus for China has been the economic development since the opening-up in 1978, while ignoring the environmental protection for a long time. China has surpassed the United Sates as the top emitting country of greenhouse gases in world. In 2020, the carbon emission of China accounted for 31% of the world's emission (Wei et al., 2022) as Fig. 1.1 shows. China is experiencing 7.42% average annual growth rate of CO_2 emissions (Anwar et al., 2020). Along with the severe weather conditions, the impact of global warming, and lack of resources, the pro-environmental consciousness has been aroused gradually. (Baas & Hjelm, 2015). On December 9, 2014, the meaning and implication of the "New Normal" has been comprehensively clarified by the Chinese President in the Asia Pacific Economic Cooperation. He highlighted a new guidance of decreasing the economic development and stimulating a low-carbon, environmental and sustainable

development. This significant shift brought challenges to government, companies, academia and other sectors (Baas & Hjelm, 2015).

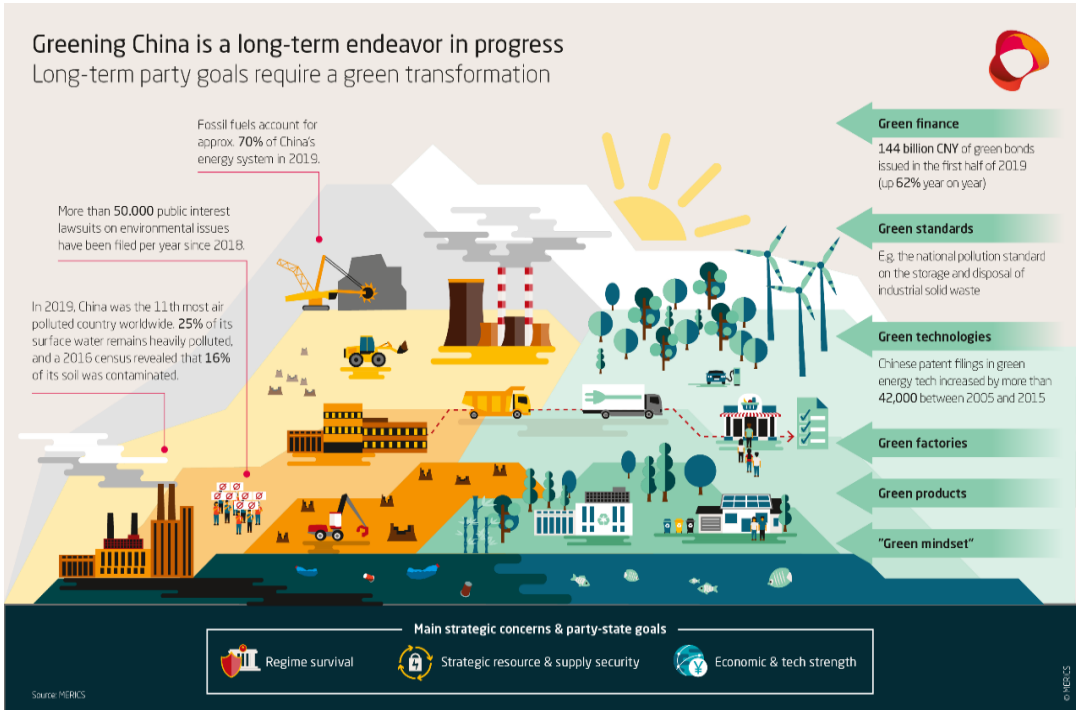


Source: Adopted from Wei et al. (2022)

Figure 1.1 The total global carbon emissions in 2020 are structured by region.

The Covid-19 dilemma is treated as another environmental disaster in the world, including China. Post-crisis, there is a reconsideration of the human relationship with nature and a push for a better model of coexistence with the environment. Chinese government acknowledges the unsustainability of this development path and has started to attach greater importance and pay more attention to achieve green growth and reduce climate change actions. Chinese government and leaders have tried to utilize various tools and measures to promote and develop a green transformation. (Holzmann & Grünberg, 2021). According to Chinese "14th Five-Year Plan" (The State Council of the People's Republic of China, 2021), the ecological and civilization development of China is devoted to reducing carbon emission and developing green economy. On April 30, 2021, all governments were asked to figure out a road map and

timeline to boost the effective utilization of resources and environmental development. Becoming “Green China” is the main objective of all efforts and measures they have taken (Holzmann & Grünberg, 2021).



Source: Adopted from Holzmann & Grünberg (2021)

Figure 1.2 Green China

The foundation for the stable and improving ecological environment is not yet solid, even though China has conducted various kinds of measures to improve the environment. The difficulty of continuously improving the ecological environment has become significantly greater; the task of ecological environmental protection remains arduous. First issue is that PM2.5 pollution in some regions and at certain times remains severe. In 2022, the average PM2.5 concentration in the Beijing-Tianjin-Hebei region and the Fenwei Plain exceeded the standard by 25.7% and 31.4%, respectively. The air pollution in autumn and winter was still relatively serious, and

regional heavy pollution episodes still occurred occasionally. In particular, the impact of sandstorms on air quality has been significant in spring. The second problem is that the imbalance and incoordination of water ecological environment is still prominent. In some regions, pollution problems during the flood season are particularly prominent. The elimination of black and smelly water bodies from the root is difficult, and local coastal waters are still polluted in some areas. Last, the problem of ecological damage in some areas is prominent. The general trend of biodiversity decline has not been effectively curbed. The turning point of quantitative to qualitative change in China's ecological and environmental quality has not yet occurred. The task of ecological and environmental protection is still arduous, and it is far from time to take a breath, have a rest and relax the efforts. The momentum of environmental quality improvement must be sustained (Ruan, 2023).

Protecting the environment to achieve the sustainable development is crucial for all countries, especially for China. Environmental management has significant potential to effectively handle this issue. It should not be viewed just as a policy, but rather as an integral part of organizations' change agent (J. Ahmad et al., 2023). According to Assessment of Changes in National Ecological Status from 2015 to 2020, China's ecological background is fragile, the overall level of ecosystem quality is still low, the problem of over-exploitation and irrational use of natural resources has not been fundamentally resolved, and ecological protection and restoration remains a long and arduous task (The Paper News, 2023).

The focal point of international concern regarding net zero emission was the Paris agreement of 2015, which sought to maintain the rise in the global average temperature to well below 2^{o}C above pre-industrial levels and to restrict global warming to under 1.5^{o}C. Urgent measures are necessary to decrease global greenhouse gas emissions by 44% relative to 2010 levels by 2030, aiming for net zero emissions by 2050 (Li et al., 2023; Liu et al., 2020). The escalating severity of the climate catastrophe has rendered it one of the most prominent environmental challenges, leading to its incorporation into practically every school curriculum to equip future generations with the necessary tools to address climate change (Jackson & Jensen, 2022).

Researchers and policymakers have reached a consensus that the causes of environmental degradation, such as resource scarcity, escalating pollution and biodiversity loss, are fundamentally linked to individual behaviour (Anwar et al., 2020). Individuals' ecologically conscious behaviours have received extensive attention because of their positive impact on both the environmental and financial achievement of organizations, as well as the natural environment (Alt & Spitzeck, 2016; Pham et al., 2019). Implementing waste reduction, energy conservation, and recycling practices not only result in cost savings and a competitive edge for organizations, but also allow them to satisfy their social obligation in protecting the environment (Anser et al., 2021).

The influence of human civilization on the earth system, perceived as a complex and delicate organism in an unstable balance, is a significant concern for contemporary politicians and scientists. A significant number of individuals recognize and express concern over global warming; nonetheless, fewer realize that human activity has become substantially more potent, and its consequences may be significantly more detrimental than presently anticipated (Bouman et al., 2020). Consequently, scholars and policymakers assert that promoting ecologically friendly behaviour will contribute to addressing these challenges, as numerous environmental issues stem from human actions (Thondhlana & Hlatshwayo, 2018).

A poll conducted by Wunderman Thompson (2021) in 2021 showed that in China, 86% of adult said they were willing to contribute at least 0.5% of their annual salary to decrease the damage cause on environment in comparison to 64% of those in the UK and 62% in the US. As a result, Chinese adults are more concerned about environmental problem than the global average. They are also more likely to do something about it (Man-Chung Cheung, 2021). The Chinese government has intensified its focus on the necessity of environmental quality as an essential element of sustainable development, as indiscriminate, excessive, and chaotic resource exploitation and unbridled consumption increasingly approach or surpass the limits of environmental carrying capacity (Xiao & Hong, 2010). The government aims to attain sustainable development by enhancing public awareness and behaviours, ensuring the

alignment of the economy, resources, and natural environment. Nevertheless, pro-environment behaviours are at a low level in Chinese society (Wang et al., 2022).

1.2.2 Sustainable Development for Higher Education Institutions in China

Sustainable development in Higher Education Institutions has emerged as a global focus in recent decades, with an increasing recognition of universities' role in promoting sustainable development (Yuan & Zuo, 2013). The increasing apprehensions over resource utilization on campus and the rising trend of sustainability advocacy in society enhance the discussion on promoting sustainable development inside higher education institutions (Rampasso et al., 2019). As a social construct, higher education institutions have transformational power since it increases a country's capacity for knowledge, skills, and creativity. Furthermore, HEIs possess the capacity to enhance environmental quality by increasing public awareness of ecological concerns and pollutants, and by promoting the dissemination of knowledge essential for the execution of carbon reduction policies, eco-innovation, green manufacturing, and sustainable behaviours, especially in developing nations (Abbas, 2020; Akhtar et al., 2022). Numerous universities in the world have attempted to improve environmental sustainability in order to reduce Anthropogenic carbon dioxide emissions (X. Li et al., 2015). Higher education institutions should undertake responsibilities to establish ecological and sustainable universities (Choong et al., 2019; Lukman et al., 2013), inclusive of universities in China. The higher education

sector must actively contribute to Chinese society's attainment of strategic objectives for sustainable development (Shuqin et al., 2019).

For all organizations which include higher education, employees' pro-environmental behaviour has become crucial, no matter the sector (Rayner & Morgan, 2018). Numerous organizations are motivated to minimize the negative impact of their daily operations on the environment by adopting environmental management systems or green initiatives. Therefore, there is a growing requirement to comprehend and influence employee behaviour in order to reduce the negative effects caused by their actions within organizations (Anwar et al., 2020). While higher education institutions generate less pollution compared to the manufacturing industry, they have a crucial role in promoting environmental consciousness, conducting research, and teaching present and future students about the significance of eco-friendly activities (Rayner & Morgan, 2018). Wright and Horst (2013) suggested that higher education institutions were one of several kinds of organizations in charge of ensuring an environmentally friendly future. These institutions have considerable influence on environment since the educational sector is the largest public sector energy consumer throughout China (The State Council of the People's Republic of China, 2023)

Accordingly, the United Nations began emphasizing on the critical relevance of higher education institutions in achieving sustainable development aims which are the measure intended to bring about social and national transformation (Elfert, 2019). Educational institutions have a crucial role in attaining sustainable development within

the country (Aymerich & Herce, 2020; Gou et al., 2021; Qin et al., 2021). The educational sector, particularly the higher education sector must play increasingly active roles to help Chinese society to achieve goals of carbon emission peak and the strategic sustainable development (X. Yuan et al., 2013), because they develop more future generation of leaders, policymakers and decision-makers to implement the sustainable development objectives developed by the United Nations than any other single sector of society (Yuhlong et al., 2018). Furthermore, through the moral obligation to incorporate such aims into their educational programs, higher education institutions have an essential effect for boosting sustainable development targets (Caeiro et al., 2020).

People and Planet, the largest student network in the UK campaigning for social and environmental justice, estimates that almost 80% of a university's energy is consumed by their staff and students, such as water, electricity and other living energy (Laura, 2020). As Mohamed et al. (2020) suggested that employee behaviour plays a critical role in decreasing environmental degradation and achieving good performance in the higher education institutions, which in turn has a widespread impact on society. The sustainable development in higher education institutions has received attention due to the impacts of their management and activities, such as circulation of vehicles and excessive energy consumption on campus. Higher education institutions encourage green behaviour to promote the sustainable consumption of resources in response to the growing environmental issues and the increasing costs of resource

usage (Anwar et al., 2020). According to the report of China Ministry of Education (Ministry of Education of the People's Republic of China, 2023), administrative staff make up more than 30% of staff in higher education institutions. Their impact of workplace activities on the universities' environment cannot be neglected. If administrative staff's behaviour related to environment would not change, the status quo of higher education institutions' environment would not have obvious change.

In higher education institutions, most sustainability subjects focus on environmental management (Adjei et al., 2021). Presently, one of the distinguished goals for Chinese high education sector is to execute as a model for the society in order to help decrease greenhouse gas emissions and make more people turn to environmentalists for pursuing improving human habitat and satisfaction (Abu Qdais et al., 2019; Adomßent et al., 2019; Choi et al., 2017; Sima et al., 2019).

On October 26, 2022, the Ministry of Education of China (Ministry of Education of the People's Republic of China, 2022) issued a "Notice on the Implementation Plan for the Construction of the National Education System for Green and Low-carbon Development". It was said that green and low-carbon development should be integrated into campus construction, the campus emission reduction products and services should be prioritized in the construction of new campuses and the renovation of existing campuses. As mentioned by Yang (2021), to achieve "carbon peak, carbon neutrality", the role of universities cannot be absent. In addition to stepping up scientific and technological innovation, conducting systematic and

transformative research on basic theories, key technologies and engineering applications, and attaching importance to the training of innovative talents, universities should also advocate a simple, moderate, green, low-carbon, civilized and healthy lifestyle to staffs, students and the public, and help cultivate green, healthy, low-carbon and safe consumption habits. Boër (2024) reported that sustainable development is a hot word. How to make sustainability not just a political slogan, but something that can be applied in practice. When staffs are sitting in the office with the lights on, and the sunlight outside the window is bright enough, they are consuming unnecessary energy. These small things make a big difference, and it is necessary to understand how these relatively small changes can improve sustainability.

In China, an increasing number of HEIs are integrating environmental management into their policies, innovation, initiatives, and campus activities since they recognize their environmental obligations (Anwar et al., 2020). Nonetheless, their progress towards the sustainable development is exceedingly sluggish (Piwowar-Sulej, 2021). It is the perfect time for provoking individuals' pro-environmental awareness and encouraging their behaviour towards the environment, as higher education institutions are redesigning systems and routines in the wake of the emergence of COVID-19. This is a timely moment when staff and students can be encouraged to consider new behaviours and higher education leaders can consider how to build back better. When people are nudged away from overconsumption and waste, and towards energy efficiency and lower-impact lifestyles, they are playing a part in fighting

climate change as well as preserving the natural world in which they live and on which they rely. Each person is accountable for sustainable development because of the present global warming index's rapid volatility (M. S. Khan & Terason, 2022). Green behaviour is a new concept for higher education institutions. Understanding factors that influence the university employees' propensity to engage in pro-environmental behaviour is key to the environmental sustainability of universities (Aziz et al., 2021).

1.2.3 China Green University Network

In March 2011, the China Green University Network (CGUN) was set up to reinforce cooperation among different campuses, promote innovation, and popularize energy saving innovation. It was suggested by Tongji University and seven other top Chinese universities. The initiators of CGUN include eight universities, such as Tongji University, Tianjin University, Zhejiang University, Hong Kong Polytechnic University, South China University of Technology, Chongqing University, Shandong Jianzhu University, and Jiangnan University (X. Yuan et al., 2013). The eight universities in the alliance are the first batch of conservation-oriented campus demonstration universities in China, and in the future, the alliance will gradually absorb and develop colleges and universities that have a working foundation in the field of green campus, including universities in the Mainland, Taiwan and Hongkong, and overseas (Tongji University, 2011).

The CGUN was founded as a non-profit organization. It is funded by the Ministry of Housing and Urban-Rural Development, the Ministry of Education, and the American Energy Foundation. The Chinese government has decided to improve ecological development in universities for pursuing the goal of the establishment of "Green Universities" (Zhu et al., 2021). This program comprises three phases: energy consumption monitoring, energy auditing, and operational improvement. The following areas are the working subject of CGUN, (1) to strengthen cooperation and exchange among universities focusing on building Green Campuses; (2) to provide assistance with formulating national policy in regard to energy management in universities; (3) to encourage green building technology invention, development and collaboration; (4) to train senior employees in the field of green campus and green building energy efficiency management; (5) to provide actual and practical experiences for the cultivation and development of green campus culture; (6) to guide the development and construction of "Green Universities" in China (Tongji University, 2011).

On 17 April 2021, CGUN initiated and announced "The China Higher Education Institutions Carbon Neutral Action Declaration", which received active responses and signatures from 44 universities across the country who all committed to reach carbon neutral before 2050. The Chinese version of "The Little Book of Green Nudges also launched" has also been launched by CGUN. This book is a first-rate example of how the written word can be used to identify opportunities, target

communities and motivate individuals to take active steps to both change their behaviour and reduce their greenhouse gas emissions on campus. Behavioural science shows that a simple “nudge” towards everyday greener decisions is a powerful spur to environmental action for individuals in campus. Techniques such as gentle persuasion, changing the framing of choices, resetting default options or harnessing social influence can all lead towards sustainable conduct and an eco-friendly campus.

1.3 Problem Statement

China has surpassed the United Sates as the top emitting country of greenhouse gases in world. In 2020, the carbon emission of China accounted for 31% of the world’s emission (Wei et al., 2022). Moreover, China is experiencing 7.42% average annual growth rate of CO_2 emissions (Anwar et al., 2020). Throughout China, in the public sector, the largest energy consumer is higher education, which taking up almost 40% of the energy consumption. Per capita water and electricity consumption in HEIs has reached three times the national per capita living energy (The State Council of the People’s Republic of China, 2023). There are serious energy waste problems such as lack of effective energy saving control, low energy efficiency. The phenomenon of energy waste is very serious; lights and air conditioning are always on in empty rooms, for example (Chen, 2021). Universities have turned to the prominent users of energy and paper. In higher education institutions, lights of empty room are not turned off; and water fountains are often on the power even at night (Song et al., 2020).

Additionally, printing out documents is more common than only having digital copies in higher education institutions. Large-scale printing will consume large resources and have an immediate influence on environmental sustainability (M. S. Khan & Terason, 2022).

Despite the fact that employees are typically aware of the environment, their pro-environmental practices are still limited in workplace (Bashirun et al., 2019). The cause for this divergence is most likely China's long-term disregard of low-carbon growth in a framework that prioritises economic expansion. Low carbon development has received little attention, and there are little chances for pro-environmental behaviours. Behaviour change has often been left out of discussions about environmental policy because of the focus on technical and economic incentives. Green behaviours might be challenging for individuals to adopt in public. Lack of promotion on low-carbon and sustainable development might lead to a lack of green knowledge and behaviours (Fu et al., 2018).

Concerns regarding environmental sustainability on university campuses stem from the detrimental effects of these institutions' operations and activities, which include material consumption, waste generation, excessive transportation of individuals and vehicles, and electricity usage (Gandasari et al., 2020). The education sector in China produced an amount of paper waste, resulting in high energy and water consumption, which contributed to air pollution and energy waste. Staff in educational sector in China should be discouraged to use non-recyclable materials in the workplace

(Ghosh, 2022). There are very few resource saving measures in terms of material and waste, and there is no distinct achievement in campuses. Comparing with gradual generalization of reused or recycled material and waste in universities abroad, there is little use of reusable building material, recycled paper, recycled electronic products, and garbage compost as well (Shuqin et al., 2019). Thus, it is critical to turn energy-wasteful campuses into green campuses because of their high water and energy consumption as well as air pollution (Abu Qdais et al., 2019; Sima et al., 2019). Universities are pressurized to devote to the accomplishment of sustainable development with the ascribed roles in the face of the sustainability challenges.

There is a lack of empirical research on the connection between higher education and environmental pollution, implies that this key factor has been paid little attention before. Employee behaviour is still underexplored, and green campus need to research at it (Gu et al., 2022; Gandasari et al., 2020). As mentioned by M. S. Khan et al. (2020), individuals play an essential role in environmental sustainability. As the main driving forces of environmental problems, human activities are prominent factors that cannot be ignored (Wang et al., 2018; Wei et al., 2022). Despite the efforts of governments and organizations to create and implement various policies and regulations, these mechanisms have been proven insufficient in addressing the complicated environmental issues (Graafland & Bovenberg, 2020; Pham et al., 2019). The lack of effective institutional methods in deal with environmental issues has compelled researchers and practitioners to explore the impact of employees' green

behaviours (Anser et al., 2021). Factors that hinder the development of sustainability initiatives in HEIs include insufficient specialized leadership, ambiguous environmental performance indicators for employees' behaviour, conservative and bureaucratic organizational culture that diminishes employees' engagement in sustainable efforts (Najad et al., 2018; Zheng et al., 2021). Previous research (Anwar et al., 2020; Aboramadan, 2022; Gandasari et al., 2020; Gu et al., 2022) has recommended to explore predictors of employees' green behaviour in higher education sector.

Changes in leadership strategies, strategic planning initiatives, decision-making processes, changes in organizational structures and collaborative efforts for the future require more focus on the leaders in universities and institutions as well as their teachers and staff (Szekely & Mason, 2019). Environmentally-specific servant leadership is the demonstration of servant leadership with a focus on addressing eco-friendly interests (Tuan, 2018). Environmentally specific servant leaders act altruistically and instil in their staff attitudes of concern for the benefit of the environment (Zafar et al., 2022).

The extant studies have reported both direct and indirect impact of organizational culture on employees' behaviour (Anh Vu et al., 2022; Berman et al., 2013). Managerial practices that complies with collectivism, group-oriented principles such as group aims, goal setting participation and decision-making are proven to spur collectivist cultures in China (Drenth, 2018). As employee empowerment does not

solely influence employees green task performance (Paillé & Francoeur, 2022), past studies have recommended to explore potential mechanism and conditional factors at the individual, team and organizational level (Gu & Liu, 2022).

Accordingly, green employee empowerment is necessary for organizations to achieve their green goal since it empowers employees to conduct green activities in their work (M. Tariq et al., 2020). On the same line, environmental passion creates a sense of fulfilment and contentment among employees, drives their actual practices and motivates them to exhibit eco-friendly behaviour (Yin et al., 2021). In addition, employees, who are concerned about the environment, are more likely to find personal fulfilment in pro-environmental behaviour (Fatoki, 2022). As Ajibade and Boateng (2021) reported that environmental self-identity is significantly associated with sustainable behaviour.

Therefore, the study will investigate collective influence of environmentally-specific servant leadership, green employee empowerment, collectivism-based organizational culture, environmental passion and environmental self-identity on promoting administrative staff's green behaviour in higher education institutions in China. Such an attempt may receive a richer understanding on the staff's green behaviour in higher education institutions in China which is still in its infancy.

1.4 Research Objectives

Based on the preceding discussion on the issues relevant to higher education institutions in China especially in ensuring their sustainable development, the current study attempts to achieve the following objectives:

1. To examine the effect of environmentally-specific servant leadership on environmental passion and environmental self-identity.
2. To examine the effects of collectivism-based organizational culture on environmental passion and environmental self-identity.
3. To examine the effects of green empowerment on environmental passion and environmental self-identity.
4. To examine the effects of environmental passion on employees' workplace green behaviour.
5. To examine the effects of environmental self-identity on employees' workplace green behaviour.
6. To examine the mediating effect of environmental passion on the relationship of environmentally-specific servant leadership, collectivism-based organizational culture and green empowerment with employees' workplace green behaviour.
7. To examine the mediating effect of environmental self-identity on the relationship of environmentally-specific servant leadership, collectivism-based organizational culture and green empowerment with employees' workplace green behaviour.

8. To examine the moderating effect of team cohesion on the relationship of environmental passion and environmental self-identity with employees' workplace green behaviour.

1.5 Research Questions

With reference to research objectives, following research questions are introduced.

1. What is the relationship between environmentally-specific servant leadership and environmental passion and self-identity?
2. What is the relationship between collectivism-based organizational culture and environmental passion and self-identity?
3. What is the relationship between green empowerment and environmental passion and self-identity?
4. What is the relationship between environmental passion and employees' workplace green behaviour?
5. What is the relationship between environmental self-identity and employees' workplace green behaviour?
6. How does environmental passion mediate the relationship between environmentally-specific servant leadership, collectivism-based organizational culture, green empowerment and employees' workplace green behaviour?

7. How does environmental self-identity mediate the relationship between environmental-specific servant leadership, collectivism-based organizational culture, green empowerment and employees' workplace green behaviour?
8. How does team cohesion moderate the relationship between environmental passion, self-identity and employees' workplace green behaviour?

1.6 Scope of Study

In term of scope, this study will focus on the empirical examination of employees' workplace green behaviour among green universities in China. The research was conducted to understand the driving factors at individual level (environmentally-specific servant leadership), organizational level (collectivism-based organizational culture and green empowerment) on employees' workplace green behaviour. Next, the research is also interested in determining the role of environmental passion and environmental self-identity as the predictor towards employees' workplace green behaviour. Subsequently, this research explores the mediating role of environmental passion in the relationship between the drivers at the individual and organizational levels, and employees' workplace green behaviour. In addition, this research examines the contingent role of team cohesion, which is assumed to change the strength of the environmental self-identity -employees' workplace green behaviour nexus.