Oponentský posudok na doktorskú prácu

Referee report on a doctoral dissertation

Defendant:	**Sandeep Kumar Dey**
Supervisor:	doc. Ing. Zuzana Tučková, Ph.D.
Referee:	doc. PhDr. Ing. Martin Boďa, PhD.
Title of the thesis:	**An integrated framework towards investigating green purchase behaviour: evidence from the hotel industry**

The doctoral dissertation *An integrated framework towards investigating green purchase behaviour: evidence from the hotel industry* was submitted by Sandeep Kumar Dey in partial fulfilment of the requirements for the degree of Philosophiae Doctor (PhD.) in the study program P6208 Economics and Management at the Faculty of Management and Economics of Tomáš Baťa University in Zlín, the Czech Republic.

As is suggested by the title of the dissertation, the dissertation is positioned in the field of tourism research and investigates behavioural factors that shape and preordain accommodation decisions to favour and choose eco-friendly lodging facilities. The ambition is to account for a wide array of possible psychological determinants, and to include novel socio-cognitive variables that have been overlooked in the extant tourism literature. The empirical part of the dissertation is focused on India, and aspects of green purchase behaviour are examined for a sample of potential Indian hotel customers, whilst performing some other ancillary research enquiries.

The goal of the dissertation is couched on page 23 as the main aim, which is *"to close the intention-behaviour gap towards green hotels by incorporating negative and positive anticipated emotions, perceived greenwashing effect, daily green behaviour, ecological attitude and mindfulness in the model of goal directed behaviour"*. In order to attain this goal, a total of five research questions RQ1 to RQ5 and five research objectives RO1 to RO5 are formulated on page 23. In spite of this separation, the research questions are fully congruent with the research objectives, and are a mere restatement. The research has both a qualitative part resting in a thematic analysis conducted in a format of computer-assisted personal interviews (CAPI) in collaboration with 10 hotel managers, and a quantitative part consisting in a survey of attitudinal, aversive, self-awareness and habitual factors of sustainable consumption of hotel services collected by the questionnaire method for a sample of 750 potential hotel guests in India. The quantitative part of the research is matched against twelve hypotheses H1 to H12 that describe direct influences of a number of behavioural factors and one hypothesis H13 that relates to indirect influences. Extensive analyses were performed by using the conventional methodology in this field based on structural equation modelling (SEM), here implemented as PLS-SEM (partial least squares SEM).

The contributions of the thesis are in detail elaborated on pages 65 to 66, and they include the following theoretical advances and novelties:
- creation of a comprehensive framework to predict and model green hotel behaviour,
- inclusion of descriptive norms, subjective norms, anticipated feelings, behavioural frequency and actual green behaviour into the modelling framework,
- inclusion of greenwashing effects and mindfulness as factors of green hotel behaviour.

In addition, the dissertation has established several factors that drive green hotel behaviour, to wit:
- Ecological attitude is found to drive the desire for green hotel behaviour.
- Daily green behaviour is found to be positively linked with the intention for green hotel behaviour.
- Positive affective emotions trigger the desire for green hotel behaviour.
- Greenwashing discourages from the desire to opt for green hotels.

Topicality of the research agenda

The research agenda is aligned with the current interest of society and academia as is declared in Sections 1 and 2 (i.e. the introduction and the literature review). There are numerous reasons to study factors that motivate environmentally friendly decisions when it comes to purchases of accommodation services. For one thing, they are useful in explaining the behavioural processes of consumption in tourism from the point of view of tourism psychology. For another, their knowledge is helpful for accommodation facilities to alter their operating and strategic models in order to make their business profitable and sustainable. In order to motivate the research agenda for the case of India, the defendant refers to several statistical facts or cites several predictions of the ecological burden that Indian tourism and Indian lodging facilities represent to the economy or even to the world. Critically, some references are fairly outdated and disputable since they are based on the pre-COVID-19 trends (e.g., pages 20 and 66). That said, this does not jeopardize the burden that provision of hotel services in its traditional format poses.

Methodology, expected results and contributions

The methodological procedure is generally sound, but some issues and inconsistencies are detectable, which, however, do not invalidate the contributions asserted in the dissertation or made as such. The results uncover various drivers of green purchase behaviour, and these are relevant for both hotel operators and for governmental bodies intending to promote environmentally neutral consumption in the tourism industry. One also may speculate that some findings may be transferable beyond the lodging and tourism industries as such, shedding thus light upon green purchase behaviour in general.

Nonetheless, I have some reservations to the methodology of the research that should be addressed and explained by the defendant during the defence.

1. The qualitative study reported in Section 3 is based on responses from 10 hotel managers and managerial executives that work for 5-star green hotels. Green hotels of a lower rank or conventional (non-green) hotels are not represented, so the responses may, and probably do, give a partial insight into the views of the respondents. It is not clear how these responses transformed into the quantitative part of the research and helped it in spite of the vague claim in the last paragraph of page 46.

2. Concerning the qualitative study reported in Section 3, there are some issues concerning the presentation or the analysis itself.
   - On page 44, a female executive with an age of 20 years is reported, whereas there is no such person in Table 7 on page 41.
   - There is an extensive tabular output on pages 42 and 43, which is completely unexplained and unlinked to the other text except the interpretations on page 46 that are not instrumental in understanding the actual content.
   - The analysis on pages 45 and 46 titled "similarities and differences" fails to demonstrate dissimilarities. The Venn diagrams in Figures 5 and 6 are produced for the shared highlights concerning different aspects of hotel management and workplace conditions made by 2 and 3 persons of the age bracket 20 to 33 years (Figure 5), and for 3 and 2 persons in the age 34 years at least (Figure 6), respectively. No actual differences are proven or demonstrated since Venn diagrams are used to illustrate common denominators.

3. There is a mismatch in the reported outputs of the quantitative study in Section 4. Table 12 on pages 49 to 52 presents a total of 40 items, whereas the reliability analysis reported on page 54, the correlation matrix in Annex 1 or the statistical table in Annex 3 all declare a total of 37 items. The difference is in the number of items for ATT (4 vs. 5), PAE (3 vs. 4), GHB (4 vs. 3), GRE (4 vs. 5). Obviously, the pilot test was based on a different questionnaire that was actually used. This is nowhere conceded or explained.

4. The sample size for the quantitative study is purported to have been determined by Monte Carlo simulations to be 800 to achieve a power level of 0.80, as is described on page 48. To justify this

claim, there is a reference to an R code in Annex 7. The error in "analysis.250" is marginal. Nonetheless, what is difficult to see is how this code is related to the sample size determination. Through Monte Carlo simulations, the R code merely computes the boundaries for model fit indices at a certain confidence level, not the power of the analysis. The picture on page 101 is not produced by the code on page 100. In addition, this code is prepared only for ad hoc values of coefficients that are supplied for the internal model structure and stored as "pop.model3". No justification is offered for the particular choice of population values.

5. The claims on multivariate normality on page 55 after the "Thirdly" introduction are not correct. In addition, non-normality is on the same page claimed not to be an issue when the kurtosis is not greater in absolute value than 10, and the skewness is not greater than 3 in absolute value. Albeit an influential reference is cited, this is hardly acceptable. The answers collected from the respondents are processed by factor analysis as if they were continuous measurements. Nonetheless, when the Jarque-Berra test is applied to the statistics reported in Annex 3, normality is not rejected at a confidence level of 0.05 for DGB1, INT2, NAE2 (p-values $\geq$ 0.058), 10 items have p-values greater than 0.001 and 0.036 at most (ATT3, GRE2, GRE4, MDF1, INT3, GHB3, MDF2, PAE4, MDF3, PBC1), whereas the other 23 items have p-values smaller than 0.001. These p-values are easy to calculate, and were calculated by myself.

6. There is a mistake in the formulation of the hypotheses in Table 12 on page 26, which is repeated in Table 21 on page 61. Obviously, H7 should read "Perceived Greenwashing Effect has a **negative** influence on Desire". Likewise, H8 and H9 are identical, and judging by the results, H9 should most likely read "Daily Green Behaviour has a positive influence on **Intentions**". These corrections make the statement of the hypotheses compatible with the results in Table 21.

7. The final paragraph on page 64 asserts that the bootstrap-based significance test in Table 20 on page 60 reveals that GRE (perceived greenwashing effect) had a detrimental effect upon GHB (green hotel behaviour). Yet, this is nowhere tested or proven. Truly, since $\beta_{GRE \to DES} = -0.256$ and $\beta_{DES \to INT \to GHB} = +0.067$, one has that $\beta_{GRE \to GHB} = -0.256 \times +0.067 = -0.0171$, which is indeed negative, but its significance is not formally tested. In addition, this beta coefficient is rather low in comparison to others, which shows that the effect, if any, is small and quite negligible.

8. What I also find critical is the fact that the socio-economic characteristics reported in Table 16 (region, age, gender, occupation, income) are not incorporated in the modelling framework. It might be anticipated that at least some of them do exert an influence. It is not realistic to modify the model and include these characteristics into the modelling once the research has been finalized, but it is possible to conduct an ex post analysis and check as to whether the constructs ATT, DES, DG, GHB, GRE, INT, MDF, NAE, PAE, PBC and SUN do not vary with the categories of region, age, gender, occupation and income. I guess that a boxplot analysis in the style of the one presented in Annex 3 on page 95 would be sufficient towards that end. Although the allusions to literature on page 13 claim just moderate effects of socio-economic variables, the effects established in this study are in fact moderate by all standards applied to standardized beta coefficients (that are presented in Table 20 on page upon which the interpretation rests), so there is no reason whatsoever to ignore them on the grounds of their potentially lower explanatory power.

9. The supplemental part of the dissertation contains a range of annexes that are not ushered, mentioned or explained in the text (Annexes 4, 5, 6, Annexes 8, 9, 10, 11, 12, 13). It is necessary to explain their meaning and give their interpretation during the defence.

Formal presentation and language use

It is obvious that the text was completed under time pressure for many formal aspects are not adhered to. Albeit the structure of the text is logical and meaningful, there are many occasions upon which there is some information that is not properly expanded and linked with the text. There are good many typos or many unexplained abbreviations that are left for a guess, the formatting is loose, and there also are numerous figures, tables or annexes that are not adequately incorporated in the text. Some references to parts of the text are wrong, and such are also references to literature. In spite of these formal defects, the contentual aspects of the text are not affected and the doctoral dissertation conveys

the methodology and results of the research in a comprehensible and sufficient manner. The English as such, save occasional errors, is at a good level, and the text is understandable.

Publication activity of the defendant

For the purpose of the defence of the doctoral dissertation, a list of publications of the defendant is submitted on pages 89 and 90 that includes a record of 8 articles of journals covered in the Web of Science or Scopus, 4 conference papers, 2 articles in press, one book chapter indexed in Scopus and one co-edited book. The scientific output of the descendant varies in quality and is mostly confined to local publication outlets with Ukrainian, Romanian, Czech or Croatian publishers. Relevant exceptions are Cogent Business & Management published in the United Kingdom by Cogent OA or the Journal of Quality Assurance in Hospitality and Tourism published in the USA by Routledge. The publication intensity and publication focus on publishers in Central, Eastern and Southern Europe do not depart from the current standards placed upon doctoral candidates. The declared publications are in line with the orientation of the thesis, and, hence, the publication activity can be deemed as acceptable.

Stance and recommendation

Being of the opinion that the refereed doctoral dissertation *An integrated framework towards investigating green purchase behaviour: evidence from the hotel industry* presents research with results of sufficient quality that are relevant for an international audience, I recommend its admission for defence in the study program P6208 Economics and Management at the Faculty of Management and Economics at Tomáš Baťa University in Zlín, the Czech Republic.

In Banská Bystrica on 16 Feb 2023.

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