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Sebastian Brockhaus, Moritz Petersen, Wolfgang Kersten

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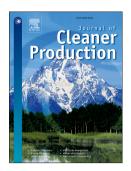
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# A CROSSROADS FOR BIOPLASTICS: EXPLORING PRODUCT DEVELOPERS' CHALLENGES TO MOVE BEYOND PETROLEUM-BASED PLASTICS

Sebastian Brockhaus<sup>1</sup>, Moritz Petersen<sup>2</sup>, and Wolfgang Kersten<sup>3</sup>

#### **Abstract**

Bioplastics play an increasingly important role for consumer products. These new materials might increase product sustainability but they are currently confined to niche markets. While research has gained important insight into the technical challenges, few studies to date explore the behavioral aspects for product developers as they move to employ bioplastics in their development efforts. This manuscript reports the findings of a grounded inductive study based on interview data with 32 product developers in the consumer goods industry. The Theory of Planned Behavior is employed to guide the research and provide a theoretical background to derive implications. The study finds that behavioral challenges impede the increased use of bioplastics. Product developers experience a lack of perceived behavioral control and struggle with doubts about the environmental benefits and incurring trade-offs of bioplastics with respect to the Triple Bottom Line. While product developers are intrinsically motivated to make more use of bioplastics, they often refrain from bringing products to the mass market due to uncertainties of customer receptiveness and fears of greenwashing allegations. Implications for industry and research are detailed.

#### **Keywords**

Sustainability; bioplastics; theory of planned behavior; consumer goods; product development; behavioral research

#### 1. INTRODUCTION

Are bio-based polymers (bioplastics) going to replace petroleum-based polymers in our everyday products – and would this be good news for the environment? Global production capacities for bioplastics are expected to increase by 300% until 2018 – then reaching 6.73 million tons (European Bioplastics, 2013). While this is still a minuscule amount compared to the global production of petroleum-based plastics (280 million tons), it does seem to represent a significant shift in focus for

<sup>&</sup>lt;sup>1</sup> John B. Goddard School of Business & Economics, Weber State University, 1337 Edvalson St, Dept 3802, Ogden, Utah 84408-3802, USA, sbrockhaus@weber.edu

<sup>&</sup>lt;sup>2</sup> Hamburg University of Technology, Institute of Business Logistics and General Management, Am Schwarzenberg-Campus 4, 21073 Hamburg, Germany, m.petersen@tuhh.de (*Corresponding Author*)

<sup>&</sup>lt;sup>3</sup> Hamburg University of Technology, Institute of Business Logistics and General Management, Am Schwarzenberg-Campus 4, 21073 Hamburg, Germany, logu@tuhh.de

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