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Time as a functional unit in comparative life cycle assessment of immaterial and material consumption systems

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Abstract:
The world summit in Rio 1992 introduced sustainable consumption as a key strategy to achieve sustainable development. One concept towards sustainable consumption is to shift consumer interest to immaterial needs and services. In contrast to product systems, little is known about the environmental implications of consumption systems. The present contribution compares the environmental impacts of two leisure activities throughout their life cycle. We perform a life cycle assessment (LCA) model study on: 1) going to a theatre and 2) consuming beer in a pub. Our focus lies on defining a proper functional unit to compare LCA of immaterial and material consumption. Economic theories apply time as an important characteristic of consumption, leisure and work. Here, we present first empirical results which include collected time data and observations.
For theatre visits, the functional unit time was found to be an unalterable characteristic of consumption. In contrast, our observations showed that the use of time for consuming beer depends strongly on socio-cultural parameters. Based on these findings we discuss the possibilities and obstacles to include the time factor as a functional unit into LCA of consumption systems.

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