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TESTING THE ROLE OF CATEGORICAL AND RESOURCE INEQUALITIES IN INDIRECT INTERNET USES OF OLDER ADULTS: A PATH ANALYSIS

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Introduction

Age-related digital inequalities have been one of the key aspects to understand and enable better ageing in the digitalized world (Hunsaker & Hargittai, 2018; Wilson-Menzfeld & Brittain, 2022). There is a vast amount of literature on digital engagement of older adults related to different forms and determinants of internet access, skills, uses, and tangible outcomes (Hargittai et al., 2019; Nguyen et al., 2022). However, existing research has largely focused only on *direct* forms of digital engagement, assuming that older adults are either self-reliant internet users or non-users (Bartol et al., 2022; Dolničar et al., 2018). In contrast, only a few studies investigated the personal and social determinants of *indirect* internet uses such as use-by-proxy (UBP)—a practice where (usually low-skilled) users or non-users ask others (i.e., proxy users) to perform activities online on their behalf (Petrovčič et al., 2022).

While UBP is a common form of digital engagement among older adults, its availability is crucial, especially for non-users because for many it represents the only way to get online (Hunsaker et al., 2020). However, not everyone who has someone *available* for doing a task online, can actually *activate* this kind of support (Grošelj et al., 2022). The scarce research on UBP shows that availability and activation of UBP are also affected

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by socioeconomic inequalities (Grošelj et al., 2019; Taipale, 2019). Notably, younger, more educated, and married older adults living in larger and financially less constrained households are not only more likely to have more supportive ties available for UBP (Taipale, 2019), but they are also more likely to enact this kind of support (Dolničar et al., 2018; Grošelj et al., 2022). It has also been shown that material and social resources have a stronger influence on the availability and activation of UBP among older adults who tend to rely on the support of close emotional social contacts (i.e., family and close friends) than among their younger counterparts (Marler & Hargittai, 2022) and tech-savvy peers (Hunsaker et al., 2020).

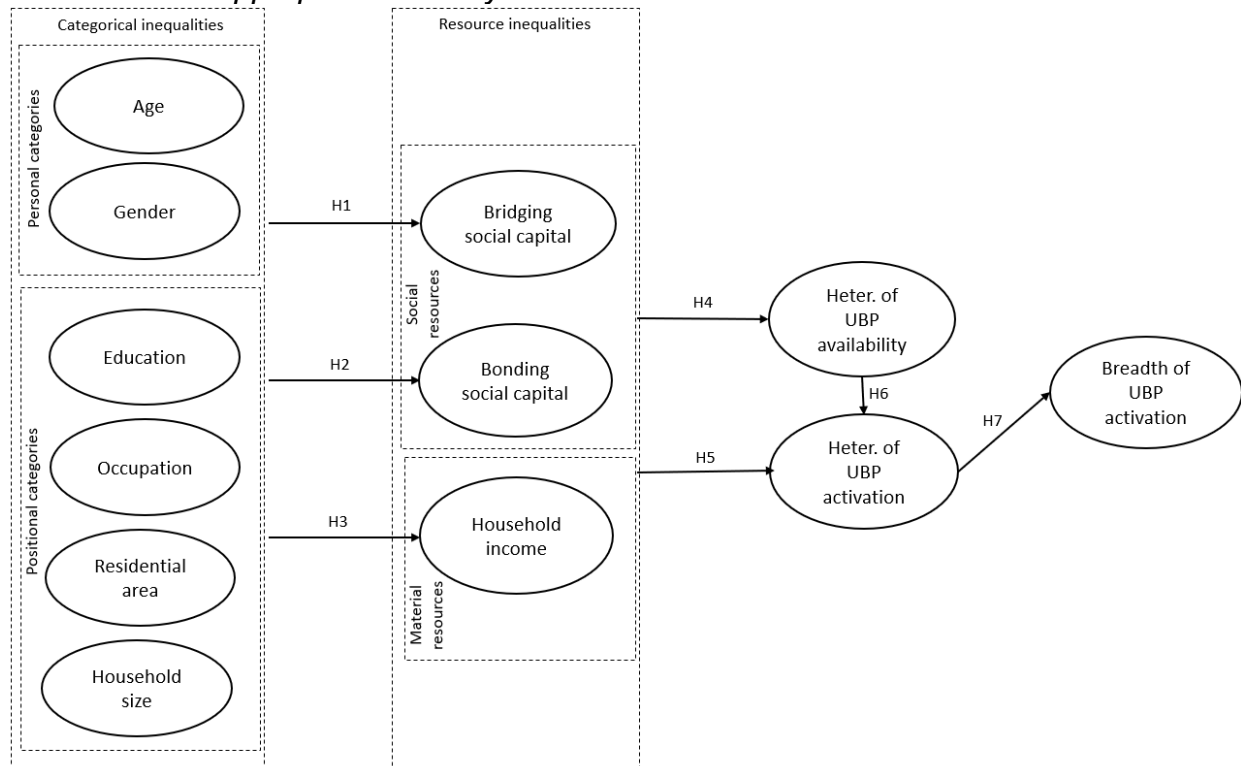
Thus, existing literature on UBP seems to be consistent with van Dijk's (2005) resources and appropriation theory. According to this theory, categorical inequalities, that is inequalities in personal (e.g., age, gender) and positional (e.g., education, occupation, marital status, residential area, household size) categories, cause differences in the distribution of resources (e.g., social, material, cultural), which are in turn responsible for unequal distributions of resources needed for internet access and use. In this paper, we therefore draw on van Dijk's (2005) theory to investigate how personal and positional categorical inequalities of older non-users influence their differences in social (i.e., bridging and bonding social capital) and material (i.e., household income) resources and how these two types of resource inequalities determine the heterogeneity of UBP availability and activation of networks. We also examine how the heterogeneity of UBP availability and activation of networks affects non-users' breadth of UBP engagement. To this end, we propose a conceptual model (Figure 1) with seven theoretical hypotheses that account for the sequential paths between categorical and resource inequalities and also discern their impact on the diversity of the role relations that older non-users have available for and activate in UBP.

Method

Data for this study were collected in a population-based telephone survey in November 2021 from a representative sample of Slovenian residents aged 65+. A total of 701 completed responses were obtained. Among the participants, 460 (65.6%) were internet users and 241 (34.4%) were non-users. The proposed model was tested with path analysis on the subsample of internet non-users. All measures were adopted from previous literature. Path analysis was used as the included variables are either single item measures or formative constructs (Kline, 2015). For model estimation, full information maximum likelihood (FIML) was used to include respondents with missing data points, while the robust maximum likelihood estimator (MLR) to account for non-normally distributed variables (Beaujean, 2014).

Figure 1

Conceptual model of use-by-proxy engagement among older adults based on the resources and appropriation theory



Results

The model demonstrated good fit to the data: $\chi^2_{(df)} = 27.146_{(24)}$ ($p = .298$); CFI = 0.994; TLI = 0.988; RMSEA = 0.018, 90% CI [0.000, 0.061]; SRMR = 0.033. Out of seven hypotheses, two were fully (H6, H7) and five partly (H1-5) supported at $p < .05$. Specifically, the results showed that among categorical inequalities only *occupation* significantly affected *bridging social capital* (H1), while *age* and *gender* influenced *bonding social capital* (H2). *Household income* was affected by *education*, *occupation*, and *household size* (H3). For resource inequalities, higher levels of *bridging* and *bonding social capital* significantly increased the *heterogeneity of UBP availability*, while *household income* did not (H4). Conversely, only *household income* had a significant positive effect on *heterogeneity of UBP activation* (H5). Lastly, the *heterogeneity of UBP availability* positively predicted *heterogeneity of UBP activation* (H6), and *heterogeneity of UBP activation* had a strong positive effect on the *breadth of UBP activation* (H7).

Discussion and Conclusion

This is the first study that draws on the resources and appropriation theory (van Dijk, 2005) to explore how categorical inequalities and differences in the distribution of material and social resources affect the availability and activation of UBP among older non-users aged 65+. Path analysis confirmed that different personal and positional categories are associated with unequal distributions of social and material resources among older non-users with positional categories affecting bridging social capital and

household income, and personal categories affecting bonding social capital. In terms of resource inequalities, the results confirmed suggestions from previous research that non-users' access to social and material resources can affect the availability and activation of UBP in their social networks (Dolničar et al., 2018; Grošelj et al., 2019). Moreover, the diversity of available role relations in UBP strongly affects the diversity of activated role relations in UBP, which in turn determines the breadth of UBP activities. In other words, non-users who know and activate more internet users for UBP also obtain help with a wider array of online activities. Overall, this study shows that disadvantages in personal and positional categories diminish social and material resources of older non-users, which in turn imposes significant constraints on finding and activating someone who would do something online on their behalf. These findings are particularly relevant because they indicate that social inequalities affect not only disparities between internet users and non-users (Hargittai et al., 2019; Nguyen et al., 2022), but also influence the ways in which older non-users engage with indirect forms of internet uses.

These findings have important theoretical and practical implications. From a theoretical perspective, they call for a deeper investigation of the sequential pathways between categorical and resource inequalities in indirect forms of internet uses and suggest the need for a holistic model of digital engagement accounting for direct and indirect internet uses. From a practical perspective, findings suggest that policy initiatives aimed at preventing digital exclusion should prioritize older non-users who lack adequate social resources or are at risk of social isolation. This would ensure that this group of older non-users that has very limited access even to indirect internet use would have the chance to partake in and benefit from the increasing digitalization of society.

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