Small Business Adoption of Gen-AI Services

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***Abstract*—The expansion of business-to-business (B2B) generative AI (gen-AI) services has the potential to transform small business entrepreneurship (SBE). These services can bring productivity benefits and increased financial gains to SBEs, but they also pose potential risks and privacy implications to SBEs and their consumers. Because B2B services are often invisible to consumers, these risks may be transferred with minimal transparency. More work is needed to understand how SBEs select, integrate, and navigate concerns related to gen-AI usage as well as to articulate the norms and expectations that consumers have for SBEs that they engage with. We propose a mixed-methods study consisting of semi-structured interviews of SBEs regarding their usage of B2B gen-AI services, followed by a large-scale vignette study of consumers about their expectations and perceptions of hypothetical SBE use cases for gen-AI. Such findings are an important part of participatory governance of broader gen-AI and protecting consumers as well as SBEs, who are ultimately consumers of B2B services themselves.**

1. Introduction

Generative artificial intelligence (gen-AI) has the potential to transform small business entrepreneurship (SBE). In particular, the rapid emergence of business-to-business (B2B) gen-AI services, which seek to fill operational functions including customer support [1], accounting/bookkeeping [2], and job hiring and recruitment [3] offers potential benefits for SBEs including expanded productivity and access into emerging markets [4], [5], [6], [7], [8]. However, the use of generative AI poses risk [9], trust [10], and security [11] and privacy implications [12], stemming both from the technology itself and from the practices of those organizations central to it [13], [14].

Furthermore, B2B services may not be immediately visible to consumers, but when an SBE elects to use them, they subject their consumer base to the benefits and the risks of these technologies in a non-transparent manner. At the same time, the B2B relationship also subjects SBEs to those very risks, as entrepreneurs are consumers of gen-AI service providers themselves. For example, an SBE that uses a third party chatbot service for customer support or scheduling may subject its consumers to data collection by that third party, or risk exposing its own internal data if it is necessary for the chatbot's functionality. These may result in privacy loss, particularly if sensitive customer data is used to train or improve the chatbot, as such information has the potential to be memorized and/or repeated [15].

However, little is known about the degree to which SBEs are adopting these services, how they decide to use them or not, and the concerns they may hold about them. While some prior work has documented these dynamics [16], [17], the focus has generally been on general-use conversational models, occasionally tuned for specific purposes, such as for business planning [18]. We thus propose three research questions:

1) How are small business entrepreneurs currently integrating generative AI into their businesses? What does the life-cycle for this integration look like?
2) What concerns do SBEs have about the generative AI services they use, and how do they navigate those concerns?
3) What are consumers' expectations, attitudes, and perceptions towards SBE's usage of generative AI? What use cases are acceptable, by which kind of SBEs, and for what tasks?

We hope that such findings can contribute to broader participatory governance of gen-AI systems by helping articulate norms and expectations for generative AI usage, support SBEs in their usage of gen-AI, and protect consumers at all levels from potential harms resulting from the use of gen-AI.

2. Background

2.1. Generative AI for small businesses

Prior research and marketing materials alike have lauded generative AI's potential to be transformative for small business entrepreneurs (SBEs) [4], [5], [6], [7], [8] but it is still unclear how broader gen-AI technologies are being leveraged by SBEs and whether and how SBEs are benefiting from them across different sectors and organizations. Lauro et al. [19] document several high-level gen-AI use cases from a diverse set of SBEs, but focus primarily on how SBEs utilize social support to help scaffold usage of conversational models rather than use cases themselves. Kotturi et al. [16] similarly document several specific use cases that some SBEs had for ChatGPT and DALL-E 2. However, more work is needed to understand the growth in the B2B gen-AI space, as more specialized applications of gen-AI emerge.

2.2. Small business technology adoption

The interactions between broader digital advancement and SBEs have been well-studied, both in the benefits that such advancements bring [20], [21] as well as the potential for being subject to, and potentially exacerbating societal inequalities, as noted in works describing the digital divide [22], [23] and self-efficacy [24], [25]. Other prior work has also examined how small businesses approach the adoption and integration process itself, but focus again on high-level adoption [26], [27], [28].

The adoption of technology by small businesses is well-exemplified by studies proposing frameworks for adoption [29] as well as scales for intent to adopt [30] and, more recently, works documenting the digital evolution of entrepreneurship [31], [32].

2.3. Norms and attitudes towards gen-AI

As generative AI gain more visibility and are increasingly implemented in day-to-day life, social norms, expectations, and attitudes surrounding their usage are likely to evolve [33], [34]. Existing work in this space has centered larger organizations, such as large corporations [35] or universities [36], [37], or specific applications of generative AI, such as those in the creative arts [38] or marketing [39]. Some prior work has examined acceptability and perceptions on part of the the entrepreneur [16], [17], but consumers' attitudes towards SBE usage of gen-AI is still needed, albeit difficult given the diversity of both SBEs and potential gen-AI use cases.

3. Methods

We propose a mixed-methods study consisting of a large-scale web measurement effort, semi-structured interviews, and a vignette study.

We will first seek to capture the landscape of visible SBE utilization of gen-AI services in a number of ways. Firstly, we will crawl the online webpages of small businesses listed in the directories of regional chambers of commerce, cross-correlated with listings in the federal Small Business Administration database. We will analyze the content of these pages and their privacy policies to capture the presence of gen-AI services and/or disclosure of gen-AI usage.

In conjunction with this web measurement, we will conduct semi-structured interviews with owners or decision makers of SBEs, if they are or have in the past considered utilizing a gen-AI service. While bootstrapping recruitment, we will also collect quantitative measures on the different services that SBEs may have encountered or been exposed to, as well as the vendors/operators of those services. We can then perform cognitive walkthroughs of each service to understand the features and controls available to SBEs who utilize them. The insights gained from these walkthroughs can inform the interviewing process with respect to the agency that SBEs are able to exercise when using gen-AI services.

The goal of these interviews is to capture the use cases for gen-AI, how they arrived at their decision to use or not use gen-AI, and their concerns about utilization. We will also seek to capture the workflows involved in usage, what data or information is typically shared with gen-AI services, and the perceived benefits or costs. We will then apply qualitative coding and reflexive thematic analysis to characterize rationales for usage and how concerns are addressed or mitigated.

Building from this analysis, we will develop vignettes that describe hypothetical gen-AI usage scenarios, with the intent of capturing expectations, attitudes, and concerns about SBE usage. We specifically seek to vary the vignettes across a number of dimensions, including:

- Who maintains/provides the gen-AI service
- What the capabilities of the service are
- How the SBE is using the service
- The products or services the SBE itself provides

We will then deploy these vignettes in a large-scale survey of both business owners and decision makers within SBEs as well as the broader population of consumers of SBEs to capture their expectations for usage, their acceptability, and concerns about usage. While we will not target consumers of the SBEs within our study, as seeking those individuals is logistically difficult, surveying both SBEs and consumers can capture potential differences in the beliefs that they have about gen-AI usage. Following this, we will perform an explanatory factor analysis and build a descriptive model of gen-AI acceptability within the SBE space.

4. Implications

We believe that results from this study will be useful for SBEs, consumers, and developers of gen-AI based services. Characterizing the landscape of SBE adoption of gen-AI services, will allow consumers to make more informed decisions about their decision to engage with different SBEs or be more aware of the potential risks they may be exposed to as a result of gen-AI usage by an SBE. By articulating the expectations that consumers have, SBEs can make better decisions about whether to leverage gen-AI for different functions, even potentially encouraging adoption for functions that they may have elected not before, out of fear of consumer rejection. At the same time, vendors can make design choices to align with these expectations and standards to encourage adoption of their products.

More broadly, these findings can contribute towards participatory governance and regulation of gen-AI services, especially in documenting data handling expectations and norms. Characterizing and exposing these norms and expectations is a central tenet to consumer protection at all levels, both for end consumers who might expect that the data used in their interactions with an SBE ought to remain between them and the SBE, as well as SBEs-as-consumers, who need to be provided with the features and controls to adequately act on behalf of their customers.

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