



From Employee Engagement to Open Service Innovation: The Role of Creative Self-Efficacy and Employee Innovative Behaviour – A Conceptual Analysis

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Abstract. The rapid development of the industrial revolution 4.0 and digitalization challenges organizations to innovate continuously, particularly in the service sector. Open Service Innovation (OSI) has emerged as a key strategy, leveraging both internal and external resources to foster innovative solutions. However, the low engagement of employees in the innovation process remains a significant barrier. Employee engagement, defined as the emotional, cognitive, and physical connection to their work, is essential for enhancing creativity and innovation. Central to this concept are two factors: creative self-efficacy and employee innovative behavior. Creative self-efficacy, or confidence in one's creative abilities, directly influences employees' willingness to engage in innovation. Meanwhile, employee innovative behavior includes actions such as idea generation, promotion, and implementation of new solutions. This study aims to explore how these psychological factors mediate the relationship between employee engagement and open service innovation, offering a comprehensive framework grounded in Social Cognitive Theory and Employee Engagement Theory. The findings suggest that fostering an environment that supports creative self-efficacy and encourages innovative behavior can significantly enhance employee engagement, ultimately driving open service innovation.

Keywords: Employee Engagement, Open Service Innovation, Creative Self-Efficacy, Employee Innovative Behavior, Social Cognitive Theory.

1 Introduction

In the era of the industrial revolution 4.0 and increasingly growing digitalization, companies are required to adapt quickly to market changes and evolving technologies. In this context, open service innovation or *open service innovation* is an important strategy that allows companies to introduce new ideas in their services in a more collaborative and inclusive way [1]. Open service innovation leverages a wide range of external and internal resources to produce more innovative and relevant solutions to increasingly dynamic market needs. Although this concept is growing in popularity, many companies are struggling to maximize the innovation potential of their services. One of the main challenges is the low employee engagement in the innovation process. Employee engagement or *employee engagement* is a concept that describes the extent to which employees feel emotionally, cognitively, and physically connected to their

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work [2]. Employees who are involved tend to be more enthusiastic about making creative contributions, including in the context of service innovation [3].

But not all workers can participate entirely in the process of innovation. Creative self-efficacy or employees' confidence in their ability to create new and useful ideas is one of the related factors for employee engagement in innovation [4]. Past research has revealed that self-efficacy in creativity positively contributes to employees' willingness to be involved in the innovation process [5]. Those employees who have confidence in their own creativity will be more inclined to engage in the innovation process—whether they are contributing to a product, process, or service. However, despite the growing awareness of the importance of creativity and innovation, many organizations have not fully understood how to develop creative self-efficacy among their employees. In addition to creative self-efficacy, employees' innovation-related attitudes/motivations/actions constitute another significant step that could affect their participation in open service innovation [6]. This new behavior is creative, proactive and risk taking in terms of developing innovative solutions to problems. [7]. In the context of services, the innovative behavior of employees is not only limited to the ideas generated, but also includes how they implement those ideas in daily practice. Hence, the key challenge for organisations is to establish a climate that promotes and enables innovative behaviours using different means such as rewarding, acknowledging creative contributions or even through training& development aimed at enhancing creativity skills..

However, despite a broad understanding of employee engagement and innovation, there is still a huge gap in the literature linking these concepts in the context of open service innovation [8]. Existing research has largely focused on the relationship between employee engagement and innovation in general, without delving deeper into how creative self-efficacy and the employee's innovative behavior mediates or influences the relationship. In addition, although various studies have shown the importance of psychological factors such as self-confidence in creativity, there has been no study that has specifically examined how creative self-efficacy contribute to employee engagement in open service innovation [9]. Although a number of studies show that employee engagement plays an important role in driving innovation, the results are still inconsistent when associated with open service innovation (OSI). Some studies have found a direct positive relationship, while others confirm that the influence is often lost when mediators such as creative self-efficacy or employee innovative behaviour are taken into account, suggesting that engagement works indirectly through employee psychological and behavioral pathways [10]. In addition, organizational and industry contexts also play an important role, because in a customer interaction-based service environment, engagement is more likely to result in OSI than in manufacturing contexts or structures that are less supportive of openness [11]. The difference in variable operationalization and the dominance of cross-sectional research designs also reinforce the misalignment of findings, so further studies are needed to explain the conditions under which employee engagement can really drive OSI.

In this context, the Grand Theory used in this study is Social Cognitive Theory (SCT) developed by Albert Bandura. SCT offers a comprehensive explanation of how an individual's belief in their own abilities in the context of creativity can affect their actions, both in the context of work and daily life [12]. This theory emphasizes the role of self-efficacy, i.e. an individual's confidence in their ability to succeed in certain tasks,

in motivating them to participate in challenging and innovative activities [13]. In the context of this study, SCT is used to explain how creative self-efficacy employees can influence their involvement in open service innovation. In addition, the theory also recognizes the importance of the influence of the social and organizational environment in shaping individual behavior, which is relevant to the context of employee innovative behavior. Second, the theoretical control variable and key base theory for this study is Khan Employee Engagement. Kahn describes three types of employee engagement: emotional, cognitive and physical [14]. The psychological state refers to emotional engagement, where the employee experiences an emotional pull rather than push toward a purpose and cause along with CONNECTING TO THE COMPANY'S values and goals; cognitive engagement which is characterized by creativity and focus; physical effort engaged on the job. This participation, under the system of open service innovation can raise ideas' quality and lower resistance towards adopting innovations. As such, employee engagement theory becomes particularly salient in exploring how employee engagement in service innovation can be enhanced by their enhancing psychological factors like creative self-efficacy and innovative behavior [15].

The novelty of this study lies in the effort to integrate relevant psychological factors in supporting employee engagement in open service innovation. This research also offers a new perspective in connecting Social Cognitive Theory and Employee Engagement theory with service innovation, which has not been widely discussed in the literature. With a focus on creative self-efficacy and employee innovative behaviour, this research seeks to make a more in-depth contribution to the development of innovation theory, especially in the context of services that are increasingly important in today's digital economy. In addition, this research is also expected to provide practical implications for managers and organizational leaders in designing strategies that can increase employee engagement and facilitate more effective and efficient service innovation.

Therefore, this study aims to fill this gap by exploring the role of these two psychological factors in increasing employee engagement in open service innovation [1]. This research is expected to provide new insights into how organizations can develop employees' creative potential through increased self-confidence in creativity and innovative behaviors, which in turn will encourage employee engagement in open service innovation. As a result, organizations can be better prepared to face the challenges of a rapidly changing market and ensure their sustainability and competitiveness in the global marketplace. Creative self-efficacy plays an intermediary role between employee engagement and open service innovation.

2 Literature Review

2.1 Social Cognitive Theory

Social Cognitive Theory (SCT) developed by Albert Bandura which is widely adopted by many researchers such as [16], [17], [18] is a theoretical model that asserts learning takes place within social contexts through interactions among individuals, their environment, and their behaviors. The principle underlying SCT is reciprocal determinism that refers to the behavior, personal factors (i.e., cognition and emotions) and environment interchangeably affecting each other [19]. Here, the individual is not

a mere passive recipient of experience but rather an active creator and recipient of their environmental niche. Bandura's theory places significant emphasis on the role of observational learning, which involves witnessing another person behave and experience reinforcement or punishment for that behavior. This consists of four primary subfactors: attention, retention, motor reproduction, and motivation. They have to pay attention to how the model behaves, remember what they have seen, be able to reproduce the behavior themselves and be motivated enough.

SCT also focuses on human agency: the capability of humans to act forethoughtfully and consciously. Bandura has identified three types of agency in his social cognitive theory: personal agency (the capability for individuals to make things happen by what they do), proxy agency (invoking help from others) and collective agency (using cooperative work to change the state of affairs [20]). This idea brings focus on the fact that people can shape their own lives and social world by acting purposefully and reflectively. Understanding agency can also help companies to build the kind of workplace environment where employees feel they are able to make a positive change and have control over their immediate work context.

SCT has been applied in a number of contexts, including education, public health and organizational psychology. For instance, in education, we can also apply the principles of SCT to enhance student motivation and learning by modeling positive behavior and establishing a supporting learning climate as. In the context of organizations, knowledge about SCT can help managers to develop interventions aimed at increasing employee engagement, self-efficacy and innovative behaviors [21]. Therefore, SCT provides a unified model to explain and promote behavior change across social contexts.

2.2 Employee engagement

Employee engagement is a multidimensional concept that reflects the level of emotional, cognitive, and behavioral involvement of employees towards the organization and their work [22]. In the context of modern organizations, employee engagement is a crucial factor that affects the overall productivity, retention, and performance of the company. Along with the development of technology and changes in work dynamics, understanding employee engagement indicators has become increasingly important to create an adaptive and sustainable work environment. One of the main indicators of employee engagement is the quality of digital communication in the organization. Study by [23] highlighting that the digitalization of the workplace and group diversity play a crucial role in connecting innovative cultures with employee engagement. They found that innovative cultures directly affect employee engagement and indirectly through the digitalization of the workplace. In addition, group diversity moderates the relationship between workplace digitalization and employee engagement, suggesting that organizations can improve employee engagement in a diversity-oriented digital environment by cultivating innovation to facilitate employees' perception and acceptance of workplace digitalization. In addition, leadership style also has a significant impact on employee engagement. Research by [24] shows that situational leadership styles, particularly Coaching (S2) styles, have a positive relationship with new employee engagement. The study highlights the importance of engaging new hires to reduce turnover, by showing that supportive and guiding

leadership behaviors can increase their engagement with the organization, managers, and teams. Empowering leadership also contributes to increased employee engagement. [25] Found that empowering leadership has a positive impact on employee engagement, knowledge sharing, and task performance, with relational energy as a mediator. Autonomy moderates the relationship between empowering leadership and relational energy, reinforcing it when autonomy is high. These findings suggest that organizations should focus on leadership development programs that promote empowerment to achieve positive outcomes in terms of employee attitudes and behaviors.

2.3 Open Service Innovation

Innovation has high potential for organisational growth by harnessing new knowledge to re-engineer the operational flows or to establish new products or services, which have commercial potential. Such knowledge sources could be advanced technology, empirical research, creative ideas or other disciplines and today's practices-based information [26]. Open Service Innovation is a managerial process dealing with strategic aspects of innovation management which stresses the cooperation between companies and several external actors (e.g. customers, industry partners, scientific institutions) when it comes to develop service innovations [27]. This approach has its roots in the concept of open innovation developed by Henry Chesbrough, who highlights that organizations should not only rely on internal knowledge, but must also open themselves to external resources to create more effective and efficient innovations. In the context of services, open innovation allows organizations to leverage ideas and technologies from outside to develop new services or improve existing ones. This is important because the service sector often faces challenges in creating differentiation and added value for customers. By involving various external parties, organizations can enrich their innovation processes, reduce risk, and increase competitiveness in the market [28]. Overall, the Open Service Innovation theory offers a comprehensive approach to creating service innovations that are more responsive to market needs and technological developments, as well as providing guidance for organizations in managing external collaborations to achieve their innovation goals.

2.4 Creative Self-Efficacy

Creative Self-Efficacy (CSE) is a psychological concept that refers to an individual's belief in his or her ability to produce creative ideas and innovative solutions [29]. This concept has its roots in the social cognitive theory developed by Bandura, which emphasizes that an individual's belief in his or her abilities influences motivation, effort, and perseverance in the face of challenges [30]. In an organizational context, CSE is a key factor that drives employees' innovative behavior, which in turn contributes to the company's competitive advantage.

Research by [31] highlighting the role of CSE in improving innovative work behavior in higher education institutions. The study found that individuals with high levels of CSE tended to be more creative and proactive in implementing new ideas. This shows that CSE not only affects the initial stage of the innovation process (idea generation), but also the implementation and diffusion stage of innovation within the organization.

Further [32] isolated three major antecedents of CSE: transformational leadership, personal learning orientation and job discretion. With supportive and inspirational transformational leadership, employees may gain greater confidence in their creativity. Work autonomy enables employees to experiment with new ideas, and allows freedom for self learning which encourages employees to upgrade their skills on a regular interval. In the context of measurement, [33] develop and validate the CSE scale for undergraduate students, which consists of two main dimensions: confidence in the ability to generate creative ideas and confidence in the ability to implement those ideas. This scale demonstrates high reliability and validity, and can be used to identify individuals with different levels of CSE.

2.5 Employee Innovative Behaviour

The importance of EIB as a component in the system of the development of modern organizations seeking toward innovativeness and adaptation has already been [34]. Proportionally, this conduct is formally viewed as a spectrum of separate actions performed by the employee who is focused on emerging, reselling, and up demonstrating ideas that rely on enhancing processes, products, or services of a particular firm or organization, Referring to such an anti-authoritarianism of Janssen, EIB is triple-tiered: the generation of thoughts, their propaganda and their result realization, however, the latest literature proves that the action does not necessarily occur in a linear order but can overlap each other depending on the firm and the surrounding. Nevertheless, applying the Scott and Bruce method of classifying EIB as an outcome variable in one of the further conducted studies, scientists defined multiple factors affecting x y of the innovation committed by the particular employee. The social transactional anti-authoritarianism presented by perceived organizationally support indicated that the mutual status between the employee and the organization may bring significant effect to the stimulation of innovation behavior [35] It found that perceived organizational support not only had a direct effect on employees' innovative behaviors, but also increased employees' self-efficacy, which in turn encouraged innovative behaviors. In addition, effective human resource management (HR) practices play a crucial role in encouraging innovative behaviors. According to [36], HR practices that enhance employee capabilities, motivation, and opportunities such as training and development, granting autonomy, and constructive feedback can significantly increase innovative behaviors. The Ability-Motivation-Opportunity (AMO) framework is used to explain how the combination of these three elements affects employees' innovative behavior. Leadership is also an important determinant in employee innovative behavior. Study by [37] It shows that ambidextrous leadership styles, which combine exploration and exploitation, can enhance innovative behaviors through employee voice behaviour. Employees who feel listened to and valued are more likely to be motivated to contribute innovative ideas. In the context of organizational culture, support for innovation and a psychologically safe work environment also contribute to innovative behavior. Research by [38] Highlighting that an organizational culture that supports experimentation and tolerance for failure encourages employees to take risks and innovate.

3 Methodology

This study uses a conceptual approach to clarify theoretical constructs and develop new interpretations based on existing literature [39]. According to [40], a conceptual review helps identify research gaps and formulate frameworks for future empirical studies. Relevant literature is integrated to align with the research objectives, allowing a comprehensive understanding of relationships among key concepts. The outcome of this approach is a conceptual framework that can be empirically tested in future research. This framework aims to address several key questions: (1) Does Employee Engagement affect Employee Innovative Behavior? (2) Does Employee Engagement affect Creative Self-Efficacy? (3) Does Creative Self-Efficacy affect Employee Innovative Behaviour? (4) Does Employee Engagement affect Open Service Innovation? (5) Does Employee Innovative Behaviour affect Open Service Innovation? (6) Do Creative Self-Efficacy and Employee Innovative Behaviour mediate the influence of Employee Engagement on Open Service Innovation?

4. Results & Discussion

4.1 Employee Engagement terhadap Employee Innovative Behaviour

The relationship between employee engagement and employee innovative behaviour has been the focus of attention in various studies of modern organizations. Employee engagement, which reflects an employee's level of engagement, enthusiasm, and commitment to their work, is believed to play an important role in encouraging innovative behavior in the workplace. Employees who feel emotionally and cognitively engaged tend to be more proactive in finding new solutions, sharing ideas, and contributing to the organization's innovation process. This is in line with the findings [41], which shows that work engagement has a positive influence on employees' innovative behavior, especially when supported by a psychologically safe work environment. Furthermore, employee engagement also acts as a mediator in the relationship between leadership style and innovative behavior. Study by [42] found that work engagement mediates the influence of transformational leadership on employee innovative behavior in the Indonesian banking industry. This means that leadership that encourages employee engagement will increase the likelihood of innovative behaviors emerging. These findings are reinforced by research [43], which suggests that strong employee engagement, especially supported by familial relationships in the work environment, can reinforce the influence of psychological empowerment on employees' innovative behaviors.

4.2 Employee Engagement terhadap Creative Self-Efficacy

The relationship between employee engagement and creative self-efficacy has come under focus in various studies of modern organizations. Employee engagement, which reflects an employee's level of engagement, enthusiasm, and commitment to their work, is believed to play an important role in increasing employees' self-confidence in their creative abilities, known as creative self-efficacy. Employees who feel emotionally and cognitively engaged tend to be more confident in facing challenges and coming up with

innovative solutions in the workplace. This is in line with the findings [10], which shows that employee engagement has a positive relationship with creative self-efficacy, where high work engagement increases employees' confidence in their creative abilities. Furthermore, employee engagement also plays a role as a factor that strengthens creative self-efficacy through increasing intrinsic motivation and a positive work experience. Study by [44] found that empowering leadership has a positive influence on job engagement and employee creativity, with creative self-efficacy as a mediator in these relationships. This means that high work engagement, supported by empowering leadership, will increase employees' confidence in their creative abilities, which in turn encourages creative behavior in the workplace.

4.3 Creative Self-Efficacy terhadap Employee Innovative Behaviour

The relationship between creative self-efficacy and employee innovative behavior can be explained through the framework of social cognitive theory developed by Bandura. In this context, creative self-efficacy refers to an individual's belief in their ability to generate creative ideas and apply them in work. These beliefs influence an individual's motivation, perseverance, and courage in the face of challenges, which ultimately drives innovative behaviors in the workplace. Study by [45] Showing that creative self-efficacy plays a mediator in the relationship between entrepreneurial leadership and innovative work behavior, confirms the importance of creative self-confidence in driving employee innovation. Other research by [46] reveals that creative self-efficacy strengthens the relationship between authentic leadership and innovative work behaviors. In this study, creative self-efficacy acted as a moderator that reinforced the influence of authentic leadership on employees' innovative behavior. This suggests that employees' confidence in their own creative abilities can increase the positive impact of certain leadership styles on innovation in the workplace. In addition, research by [47] Highlighting the role of creative self-efficacy in strengthening the relationship between knowledge sharing and employee creativity. The study found that individuals with high levels of creative self-efficacy were better able to leverage knowledge sharing to boost their creativity. These findings emphasize the importance of building creative self-confidence among employees to encourage innovative behaviors through collaboration and knowledge exchange.

4.4 Employee Engagement terhadap Open Service Innovation

The relationship between employee engagement and open service innovation can be explained through the Job Demands-Resources Theory approach. Employee engagement, which reflects an employee's emotional and cognitive engagement to their work, serves as a psychological resource that encourages proactive and innovative behavior. Employees who have a high level of engagement tend to be more open to collaboration and the exchange of ideas, which is the essence of open service innovation. In this context, engagement serves as an internal driver that facilitates the adoption of open service innovations within the organization. Study by [48] revealed that employee engagement plays a crucial role in driving organizational innovation through human resource management (HRM) support. This research highlights the importance of HRM involvement in the entire innovation event process to connect

innovation events with daily work. HRM has a central role in initiatives that aim to support voices and stimulate diverse employee engagement in innovation in established companies. In addition, research by [49] Demonstrating that good human resource practices and working conditions can increase employee engagement in the workplace, which in turn encourages creativity and innovation. The study also highlights that intergroup relationships and alignment of goals between employees and organizations contribute positively to employee engagement, which is an important factor in driving open service innovation.

4.5 Employee Innovative Behaviour terhadap Open Service Innovation

Employee Innovative Behaviour is one of the key factors that drives organizations to transform towards open service innovation. Employees who have innovative behaviors tend to proactively identify new opportunities, develop creative ideas [50], and dare to take risks in implementing new solutions that are more effective [51]. In the context of service-based organizations, this behavior creates an inward-to-outward flow of ideas, enabling cross-functional and cross-organizational collaboration. Thus, Employee Innovative Behavior becomes a source of dynamics that enrich the open innovation process, because employees play the role not only as implementers, but also as contributors to ideas and catalysts for change [52]. In addition, the innovative behavior of employees strengthens the adaptability and responsiveness of the organization to market and customer demands [53]. When employees are actively involved in generating and sharing innovative ideas, organizations gain a competitive advantage in integrating internal and external knowledge [50]. This is in line with the concept of Open Service Innovation which emphasizes the importance of openness in the value creation process through the exchange of ideas, technologies, and resources between actors. Thus, the higher the level of innovative behavior of employees, the greater the organization's ability to create collaborative, sustainable, and adaptive service innovations to the changing dynamic business environment [52].

4.6 Creative Self-Efficacy and Employee Innovative Behaviour mediate the influence of Employee Engagement on Open Service Innovation

Employee Engagement A psychological condition in which employees are energized, committed, and absorbed in their work is often associated with increased innovative behaviors in the workplace. Recent empirical evidence shows a positive relationship between EE and employee innovative behavior (innovative work behavior), mediated by mechanisms such as knowledge-sharing and voice behaviour; So that employees who are more engaged tend to be more active in proposing, testing, and implementing new ideas [53].

In terms of social cognitive psychology, Creative Self-Efficacy, an individual's belief in his or her ability to generate creative ideas, acts as a critical psychological source that translates motivation, into innovative action. Recent studies have found that CSE strengthens employees' tendency to engage in Innovative Work Behaviour; in other words, EE can enhance Open Service Innovation (through increased energy, task support, and understanding of goals), and CSE further drives EIB [54].

Furthermore, Employee Innovative Behavior (EIB) is a behavioral mechanism that is directly relevant to the realization of Open Service Innovation (OSI). OSI, the application of the principle of open innovation in the context of services, requires the contribution of ideas and collaboration across internal/external sources; Employee EIB (ideation, promotion, exploration, and implementation of new service ideas) is an operational step that bridges individual beliefs/intentions with open service innovations that organizations can adopt. Therefore, the increase in EE through the CSE and EIB channels is expected to lead to an increase in the organization's OSI [55]. Conceptually, the proposed pattern is serial mediation: EE → (enhance) CSE → (enhance) EIB → (encourage) OSI. This model is consistent with empirical findings that explicitly test the set of roles of CSE and EIB as mediators of the relationship between employee engagement and open service innovation (e.g. Wan et al., 2022), and supported by literature that places CSE as a mediator between organizational/individual factors and innovative behaviors [55].

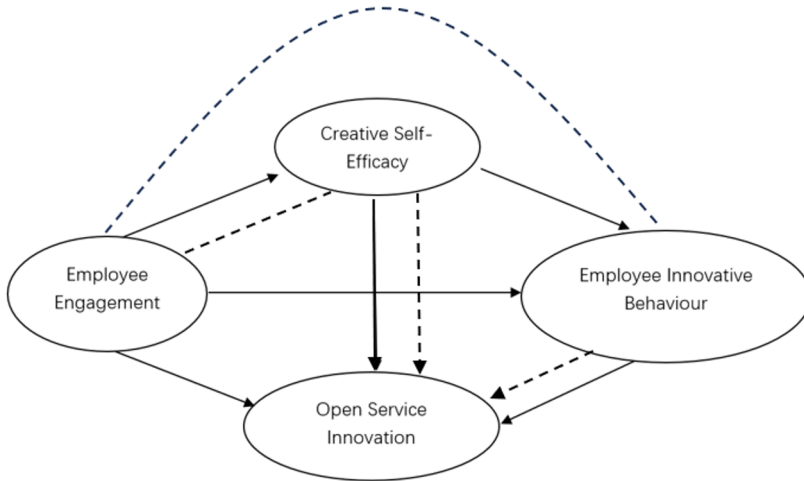


Fig. 1. Conceptual framework

This frame of mind illustrates that employee engagement has a major role in encouraging open service innovation both directly and indirectly through creative self-efficacy and employee innovative behaviour. Employees who have a high level of employee engagement will feel more confident in their creative abilities, which is called creative self-efficacy. This trust then encourages them to demonstrate innovative behaviors in the workplace. In addition, employee engagement also increases employee openness to collaboration and exchange of ideas with external parties, which is the core of open service innovation. Furthermore, creative self-efficacy also strengthens open service innovation, because employees who believe in their creativity will be more active in the open innovation process..

5 Conclusion

In conclusion, this research underscores the pivotal role of employee engagement in driving open service innovation. By boosting creative self-efficacy and fostering innovative behaviors, organizations can enhance employee involvement in the innovation process. This study highlights the importance of creating a supportive work environment where employees feel empowered to contribute creatively and collaborate openly. The results provide valuable insights for managers and leaders in designing strategies that encourage employee engagement, ultimately leading to more effective service innovation and a stronger competitive edge in the marketplace. The integration of psychological factors like self-efficacy and innovation behavior offers a new perspective in understanding how engagement influences innovation, particularly in service industries.

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