Smart working as an organizational process or as a social change? An Italian pandemic experience

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Abstract

Purpose: Along the coronavirus pandemic, managers around the world are facing huge business challenges as a result of collapsing customer demand, significant regulatory changes supported of digital development, supply chain disruptions, all of them leading to economic downturn and greater uncertainty. The authors argue that this trend is modifying the pre-eminence of market logic replacing it with values and practices linked to community-based models in order to better address the social aspects that represent the Socio-Economic response to globalization. The present work, through research carried out on Italian workers, aims to study the impact that smart working (SW) - in itself an expression of agile business adaptation - has on the worker, seen both as a member of the organization and of the social community member.

Methodology: To test the conceptual model, it is used the partial least squares structural equation modeling (PLS-SEM).

Findings: The results of the research highlighted how the evolutionary dynamics of SW employees tend towards a reconceptualization of workspaces, a redefinition of time and emotions, and a better balance between work and personal life, thus creating a greater space for social and community aspects and determining a greater involvement in their working life.

Originality/value: This research contributes to the literature in the field, as it has never been addressed before. In particular, it introduces a new win-win logic in the labour market, one capable of generating advantages for people, organizations and the entire social system, by allowing workers to better reconcile working times with their personal needs and with flexibility demands coming from companies, thus obtaining advantages and benefits in terms of both individual and organizational performance on the one hand, and personal well-being on the other.

Keyword: social change; digital development; dynamic capabilities; smart working; work-life balance; partial least squares structural equation modeling.

Article classification: Research Paper.

Introduction

Along with the severe health and social crisis caused by the coronavirus pandemic, managers around the world are facing huge business challenges as a result of collapsing customer demand, significant regulatory changes by means of the digital development, supply chain disruptions, all of them leading to economic downturn and greater uncertainty. Thus, the health and social side of the crisis on the one hand and its economic side on the other, form the scenario where the actors' conditions and survival needs meet (Fenner and Renn, 2010; Pedersen *et al.*, 2020; Lee and Trimi, 2020).

Crises or any other event that can have negative consequences for communities and business organizations alike, inevitably become sources of profound change if not properly managed (Ritter and Pedersen, 2020). However, despite the importance of crises with relation to change occurring in business organizations, the academic literature has largely neglected their role in fueling innovation and/or changing organizational and business models (Saebi and Foss, 2015). This kind of profound change represents a major challenge for managers who are wondering how to build a corporate culture, how to implement and manage organizational changes, how to adapt corporate behavior towards relevant stakeholders, when everyone works from home (Howard-Grenville, 2020; Spicer, 2020).

It must be said that the pandemic, while strengthening and accelerating some trends that were already underway, such as those regarding flexible working methods, e-commerce and digitization, is also boosting change in relatively new fields, like that of the physical movement of people (Ancona *et al.*, 2021; Foss, 2021). The pandemic has intensified the need for a quick and agile response to a situation where many companies have simply closed or curtailed their operations, while others have managed to reinvent themselves and redistribute their resources, in some cases overnight (Ahlstrom and Wang, 2021; Hitt *et al.*, 2021). These changes bring with them at global level the disruption of supply chains and management mobility models, while express at corporate level the rapid conversion from *face-to-face* to online business models and the constant redefinition of health and safety regulatory policies (Kano and Oh, 2020; Verbeke and Yuan, 2021).

One can say we are moving, thanks to the development of digital technologies and Information and Communication Technologies (ICTs), from interconnected forms of work-to-work carried out in a distributed context, where the observability of work itself is no longer based on a *seeing-the-face* approach but rather follows a *seeing-the-work-from-remote-at-all-times* approach (Puranam, 2018; Thornton *et al.*, 2012; Rajan, 2019; Woodside, 2020; George *et al.*, 2020).

The present work, through research carried out on Italian workers, aims to study the impact that Smart Working (SW), as an expression of agile business adaptation, has on the worker, seen both as a member of the organization and of the social community component. Based on what has been said so far, the research question will be as follows: *What kind of smart worker does the new approach to SW in post-Covid 19 conditions determine with regards to work, performance, social and health dimensions?*

In order to achieve this goal, the work has been structured as follows. Section 2 focuses on the theoretical analysis of the academic literature on management and organization that Covid-19 has inevitably stimulated. Section 3 describes the materials used and methods adopted. Section 4 presents the findings, and Section 5 discusses them. Finally, Section 6 contains the conclusions, limitations of the study and future research directions.

Theoretical Background

Dynamic Capabilities and Ecosystems

Covid-19 pandemic is significantly affecting both entrepreneurial and individual skills in terms of opportunities and needs. Exceptional circumstances such as these highlight the need by entrepreneurs to adapt to changes potentially affecting people's life prospects and the global economic scenario (Ratten, 2020). Many scholars and policy makers acknowledge the fact that it is the entrepreneur who looks for and creates innovative opportunities to produce economic and social value (Audretsch *et al.*, 2015). In order to achieve survival companies, including social ones, create or adapt organizational models, products and services, which in turn are engines for the creation of jobs (Malchow-Møller *et al.*, 2011), technological progress, economic growth (Rodriguez-Garcia *et al.*, 2019) and community changes. In addition to its economic impact, there is also growing evidence of the entrepreneurial ability to shape culture by influencing institutions and communities and generating solutions to social problems (Zahra and Wright, 2016). In the performance of such functions, while private entrepreneurship is a source of *emancipation* (Rindova *et al.*, 2009), aimed at pursuing financial independence, the promotion of creativity and the disruption of the *status quo*, public sector organizations tend to meet the needs of specific customer groups rather than to make profits. Indeed, scholars are increasingly acknowledging the social and cultural incorporation of entrepreneurship (Urban and Muzamhindo, 2018). This trend has shifted the focus of research from individual entrepreneurs to entrepreneurial ecosystems (EE), seen as interrelated sets of actors, profit and non-profit organizations, either public or private, that generate and support business activities through the establishment of constantly adaptive relationships (Wurth *et al.*, 2021). The advantages deriving from belonging to networks/ecosystems are essentially the access to new knowledge, the sharing of risks and resources and the joint development of dynamic and complementary skills and abilities (Fischer *et al.*, 2021). This collaborative networking promotes innovation and the co-creation of new value sources by comparing ideas and practices, combining resources and technologies, as well as by reshaping work practices with inevitable repercussions on the behavior and social role of workers (Ahmad, 2018).

The role of technology in ecosystem dynamics implies a greater formalization of the networks that support entrepreneurial activity. Especially in complex socio-economic scenarios such as the one being described, companies feel they have a growing need to plan, adapt and integrate their decisions and behaviors with other companies and social actors, either formally or informally, thus showing a command of dynamic skills and promoting the establishment of mutual influences regarding behaviors and results, either achieved or still to be achieved (Mariani *et al.*, 2018;

Seepana *et al.*, 2021;Jimenez-Jimenez *et al.*, 2019; Boeker *et al.*, 2019; Stoyanova, 2018; Teece, 2018; Zhang and Wu, 2017; Grigoriou and Rothaermel, 2017) (Figure 1).

Figure 1. Ecosystems and dynamic capabilities (source: authors' elaboration).

Therefore, all types of companies present themselves as a system of tangible and intangible components that must be effectively integrated in order to achieve survival and the creation of dynamic relationships with the relevant stakeholders (Ferraris *et al.*, 2019; Bhatti *et al.*, 2021). Schwartz, as early as 1994, argued that companies often form vague boundaries as their relationships with stakeholders are based on constant relational, interactive and co-creative strategies and activities (Henshaw, 2019). Companies therefore need to develop unique capabilities, adapt their strategies and behaviors to changing circumstances, as well as anticipate future developments and create sustainable network relationships with all stakeholders (Vahidi and Aliahmadi, 2019). As pointed out by Schumpeter, new information and knowledge - the result of ecosystemic interactions - can support the creation and transformation of opportunities, affecting both the company and the social actors that are part of it (Singh *et al.*, 2019).

On this trend, the pandemic phenomenon has significantly highlighted the importance of entrepreneurship, both public and private, and of dynamic skills in the adaptive use of new technologies, new forms of logistics, new customer needs, new organizational models based on social distancing inevitably affecting performance evaluation procedures. If the typical exploitation approach, based on the use of the resources available and the relative evaluation of the results obtained, was previously mainly adopted by companies that did not display a high risk-taking attitude (Vrontis *et al.*, 2020), in this particular moment it is marking the reorganization strategies of public sector companies.

Smart Working as Dynamic Capability and Organizational Adaptation

As to the dynamic capabilities expressed by companies in the context of the relevant ecosystems in order to adapt their routine and organization to the pandemic situation, SW is seen by the authors as that type of adaptation that, beside affecting the way companies look at their architecture and organization, is also modifying the working and social role of workers who are also members of a community (Solari, 2020; Bresciani *et al.*, 2021).

One can find in literature many definitions of SW - which inevitably creates wide scientific gaps - each one highlighting different characteristics typical of this new work culture. However, it is possible to grasp the similarities and cornerstones on which this new work approach is based, which are: collaboration, flexibility of working conditions, reconfiguration of working spaces and innovation, to be pursued without neglecting the cultural characteristics of the organization in question (Verbeke *et al.* 2008; Nidumolu *et al.*, 2013). The focus on SW has however changed (van Lier *et al.*, 2012), both in literature and practice, following the latest developments in sustainable human resource management (HRM) (Ehnert and Harry, 2012; Taylor *et al.*, 2012) and the social component of the corporate social responsibility (CSR) (Lindgreen and Swaen, 2010).

A first important condition to assess for the current implementation of SW is the context in which it is adopted (Angelici and Profeta, 2020).The second conceptual condition is represented by the smart working tools adopted and by the workers' individual conditions (productivity/performance, social, healthcare, general well-being, etc.). Furthermore, the development and diffusion of ICT can support organizations in the implementation of an SW system (Weintraub and Cassel, 2021). Another important element that will be addressed in the present work is the human resources (HR), which includes innovations in practices and in the organizational working model. SW becomes a process of production of physical and mental well-being, of rewarding results for the worker himself and for the organization he works for, but also and above all an approach of great social impact. The smart worker has, more and more, the goal of carrying out a job *in a healthy way* while at the same time achieving better work-life balance (WLB) results (Kasbuntoro *et al.*, 2020; Kotera *et al.*, 2020; Güldenberg *et al.*, 2021; Malavika and Mohana, 2021).

Timms *et al.* (2015) consider WLB a mix of organizational, psychological and social elements affecting the relationship between the employee's work engagement and social life.

The context in which agile work has developed and the new managerial trends require scholars to look at SW from a holistic perspective that could take into account the multiple dimensions involved and the different cultural references at play, with the aim of clarifying the main aspects of this new organizational approach (Tonis at al., 2021). SW requires therefore a transition from the management of activities marked by a certain number of working hours (*work*) to a logic based on personal responsibility for one's tasks (*productive*), for the targets to be reached (*performance*), for commitment and social sharing (*social*) and for achieving adequate levels of care for oneself and the loved ones (*health*).

Regarding that, Kaback (2021) argues that SWrepresents one of the most important forms of change the pandemic has introduced, not only from a cultural point of view but also and above all from an incremental perspective, because it involves all the aforementioned dimensions:

- *Productive*: one in which workers should learn how to manage the time and space of life that tends to overlap with the time and space of work (Eeshwaroju *et al.*, 2020).
- *Performance*: as it implies a change in technology and, even more importantly, in culture (by both workers and managers) for the achievement of goals (Abubakar *et al.*, 2019).
- *Social*: smart working has become a social/organizational approach, an experiment that has made the issues of technology, of the overall well-being of the worker and of its effects on performance even more central, and that allows the workers involved to acquire a better knowledge of themselves and to understand their social environment (Arends *et al.*, 2019; Nicholls *et al.*, 2020; Leone *et al.*, 2020).
- *Health*: it refers to the perception of well-being related to the optimal management of the boundaries between private and working life, the ability to maintain social relationships and

the possibility of achieving a positive impact on productivity (Bucea-Manea-Țoniș *et al.*, 2021).

In order to identify the profile of the modern smart worker, the authors, considering the most relevant literature, individuate a set of variables that characterize the last scientific decades (Baruch, 2000; Duxbury and Higgins, 2001; Rysavy *et al.*, 2020; Aurigi and Odendaal, 2021; Weintraub and Cassel, 2021):

1. Organizational performance (OP): it is about the evaluation of the worker's performance. The OP relates to specific e-working practices, to the level of autonomy, the ability to communicate information for decision-making, and to performance evaluation methods. SW allows one to freely decide where, how and when to carry out one's tasks in order to optimize performance by minimizing efforts (Abubakar *et al.*, 2019).
2. Empowerment (EMP): it expresses the working conditions in which workers acquire the power to take initiative and fully exploit their potential to generate value for both the company and the community. EMP combines sense of control, critical awareness of one's socio-political environment, involvement in the community (taking part in collective actions aimed at improving the quality of life), which makes it the synthesis of the three dimensions of our SW analysis - individual, organizational and social (Eeshwaroju *et al.*, 2020). EMP orientation becomes to organizations a key factor in order to be more effective, resilient and able to adequately face the challenges of the contemporary labour market. Effective EMP strategies lead to significant results in terms of health improvements, both at psychological, organizational and community level, and within the family, political and economic spheres.
3. Time worker (TW): it represents the management of time and of the working environment, that is the possibility of being able to protect one's private time and to put limits to the working one, even though the right to disconnect (Rasheed *et al.*, 2021).

4. Managing emotions (ME): it expresses the existence and degree of emotionalism while working in SW mode. Loneliness and a sense of isolation are the most negative emotional consequences of an inadequate SW experience (McDermott *et al.*, 2021).
5. Home office environment (HOE): it is about the role and management of Information Technology (IT) tools and SW spaces. These two factors, if poorly managed, could in fact be a cause of dissatisfaction with one's SW experience (Xiao *et al.*, 2021).
6. Human approach innovation (HAI): it represents the perception of motivation and job satisfaction, which could improve thanks to the adoption of SW (AlQershia, 2021).

The authors, to reach the paper aims, will use these variables to produce a profile of smart worker verifying empirically the real existence.

Materials and Methods

The methodological path contemplated in this work will start therefore from a non-traditional idea of SW according to which the benefits it generates refer not only to work performance levels but also to the private and social sphere of the worker who adopts it. SW, in the scenario represented here, should be seen as a revolution, an organizational adaptation that could allow the worker to reach a higher threshold of well-being and therefore contribute towards achieving a better and more rewarding WLB (Kotera, et al, 2020). This will be considered in the present study as a variable affecting the Health dimension of the worker, beside the merely productive one (Larson *et al.*, 2020). The notion of WLB should consider a wider health dimension that would include resources for parents and childcare, personal care, health and welfare of workers (Kasbuntoro *et al.*, 2020). Therefore, it brings out the need to harmonize the traditional logics of mere balancing private and working life with an analysis of the potential impact of SW in terms of well-being, sociality and performance, which gives this approach an unconventional and scarcely standardizable character (Kotera *et al.*, 2020).

So, the present work aims therefore to show that SW is capable of generating - in a holistic way - key influences on the dimensions of performance, productive, health and social, with effects on both one's private and working life. The emerging balance, the one between work and private life, might represent an implicit social value in itself, linked to issues such as gender equality, quality of life and voluntary contribution to the community one belongs to (Dousin *et al.*, 2020) (Figure 2).

Figure 2. The emerging balance between work and private life (source: authors' elaboration).

Furthermore, to produce the smart working profile the authors analyze the variable dynamics, resulting from literature review, to empirically profile an individual who works in a context more suited to his personal and working life needs (HOE), displaying an emotional involvement (ME), motivated towards the achievement of both business performance (OP) and social/personal one (EMP), in carefully managed hours (TW) and using innovative technologies (HAI) (Fedorova *et al.*, 2020) (Figure 3).

Figure 3. The smart working profile (source: authors' elaboration).

Given the number of variables identified so far and the interactions between them, a process of rationalization/simplification and formalization of the relationships between variables and the phenomenon being observed is necessary.

To this end, we carried out an empirical analysis that - albeit partial with regards to the sample chosen - would allow to obtain findings useful for identifying, by means of the study of the relationships between the variables, the characteristics of the typical contemporary worker engaged in SW according to the four dimensions mentioned above. This allows us to clarify the research hypothesis underlying our work: *to verify the way in which the 7 reference variables described above, which in turn affect the 4 dimensions of analysis (productive, organizational, social, health),* *interact directly or indirectly to eventually define the new profile of worker engaged in SW (Table 1).*

Table I. Theoretical Hypothesis (source: authors' elaboration).

Data were collected from a CAWI survey administered in 2020 to public employees working for Local Health Agencies across the Campania region, in Italy, classified as technical and administrative staff. The reference period was the time interval September-October.

Information was provided by the participants who expressed their perceptions, attitudes and satisfaction levels, about both their physical and mental well-being, while using smart working as a new organizational tool. Structured questionnaires were posted to all workers (1,500), obtaining 1,194 replies in return (with a 79.6% response rate).

The questionnaire design included an introductory section to collect general basic information regarding the interviewees (e.g., age, gender, qualifications, job title).

The study represents a pilot survey to be subsequently replicated in all Italian Local Health Agencies. In order to assess the answers provided, we used five-point multi-item Likert scales (Krosnick and Fabrigar, 1997; Carifio and Perla, 2008). In particular, the entries identify the latent variables. A latent variable is a hypothetical or an unobservable concept we measure by using a set of observable variables. The selected entries were taken from previous empirical studies (Table 2), and slightly adapted to make them more suitable to the specific context of our study. Then, the exploratory data analysis was extended by introducing more sophisticated techniques, such as the structural equation modeling, to get a more detailed understanding of the issue being analyzed.

Table II. Latent variables and descriptive statistics of indicators (source: authors' elaboration).

Structural equation modeling (SEM) is a technique that combines factor analysis and regression. In this context, we use the partial least squares structural equation modeling (PLS-SEM)(Hair *et al.*, 2017; Hair *et al.*, 2018), which is variance-based, to test our conceptual model. This is because PLS has already proven effective when the research is mainly explorative and predictive (Nelson *et al.*, 2016; Ringle *et al.*, 2014; Hair *et al.*, 2019). The algorithm should be used accordingly when the research subject is relatively new or changing, and the theoretical model or measures are not well-defined (Chin and Newsted, 1999; Reinartz *et al.*, 2009). It is further recommended to handle few indicators (less than three) per latent variable.

PLS-SEM is a data analysis approach, well established across business research disciplines, to study psychological and social constructs and to analyze in particular complex multivariate relationships among observed and latent variables. Moreover, this kind of algorithm performs better than standard SEM in situations where data are not normally distributed. For example, being PLS-SEM a non-parametric method, it does not assume the existence of any relationships among the independent variables. On the other hand statistical techniques such as that of regression, simplify assumptions about complex phenomena by considering only a limited number of variables to explain the variance with regards to a dependent variable. Furthermore, all arrows connecting a latent variable with its block of observed variables must point in the same direction. In our model, all latent variables have reflective measurements.

Figure 4 shows all relations in our model between latent and manifest variables. Nodes representing latent variables are coded as ellipses and those representing observed variables as boxes. The connections between latent and observed variables are referred to as the measurement or outer model.

Figure 4. Relations between latent and manifest variables (source: authors' elaboration).

Results

We used the plspm and SEMinR packages in R to test the viability of the measurement model. We first assessed the convergent validity of the measures by calculating Cronbach's *alpha* (Ca) and Dillon-Goldstein's *rho* (DGr). Index values of 0.70 and more support the homogeneity of indicators. As Table 3 shows, Cronbach's *alpha* for TM, ME, HOE and HAI constructs are above 0.70, not showing acceptable values, i.e. < 0.70. Nevertheless, the assumption of unidimensionality requires the first eigenvalues of the measurement models to be higher than 1 and the second eigenvalue to be less than 1. As the sixth and seventh columns of Table 3 show, the first and second eigenvalues are acceptable. It is also possible to verify the quality of a measurement model by checking the convergent validity through the amount of variance the indicators have in common. The average variance extracted (AVE) (>0.5) is an indicator of convergent validity (Hair *et al.*, 2010).

The results of factor loadings (>0.7), measuring how much of the variance of the indicators of a given construct is shared, are available in Appendix (Table A1).

Table III. Convergent Validity: Dimensionality Indices and AVE (source: authors' elaboration).

Next, we assessed the discriminant validity to show how distinct a given construct is from other constructs by analyzing the cross-loading matrix. The loading of the indicators associated with a given construct should be higher than their loading with any other construct. Besides, any construct should have an AVE larger than its highest correlation with any other constructs. According to the evaluation criteria explained above, the results are available in Appendix (Tables A2 and A3).

Given the recent debate in literature (Henseler *et al.*, 2015), we decided to carry out an additional discriminant validity test. We studied the heterotraitmonotrait ratio (HTMT), which is the average of the correlations of indicators across constructs, measuring different phenomena related to the correlations of indicators within the same construct (Nelson *et al.*, 2016).

All HTMT values between the constructs are below the critical threshold of 0.85, implying the discriminant validity between the constructs. Both estimates and 95% confidence intervals are presented in Appendix (Table A4).

Test of Structural Model

The estimates of the regression models are available in Appendix (Table A5). In particular, the first section of the table of the structural model path coefficients displays the ME and HAI loadings on OP. The second part shows the TW, ME, HOE, HAI and OP, loadings on WLB. Lastly, the third section displays the TW, HOE, HAI, OP and WLB estimates on EMP.

All the regression weights are statistically significant. R^2 values are also presented in Appendix (Table A6). The values are higher than 0.5. Following Hair *et al.* (2012), R^2 values of 0.75 and 0.50 are considered substantial and moderate, respectively, for dependent variables. Sanchez (2013) considers R^2 values >0.60 as high, and between 0.30 and 0.60 as moderate.

We also estimated the *beta* coefficients of the structural model and assessed the significance of the path coefficients using a bootstrapping technique (5,000 resamples). The estimates can be easily seen in Figure 5.

Figure 5. Graphical representation of the structural model with the loadings (source: authors' elaboration).

Estimates for Direct Effects

We then proceeded to interpret the estimated parameters. We distinguished the direct effects that correspond to the impact of one latent variable on another, without the mediation of any intermediate variable, along the causal path that goes from the former to the latter. In practice, direct effects correspond to the path coefficients, while indirect effects are the influences that are mediated by at least one other variable.

In order to test the direct effects, i.e. the significance of each path of the structural model, we calculated percentile bootstrap confidence intervals (Table 4). All direct effects are statistically significant at 5% level and the value 0 is not included in the 95% confidence intervals, except for the following direct effects: TW on EMP and HOE on EMP. Table 4 also indicates the direct effects and the related implications on production, social and health dimensions that, as shown in the literature analysis, are the subject of our research hypothesis.

Table IV. Path coefficients (source: authors' elaboration).

Discussion

Given the complexity of the phenomenon being analyzed, the authors consider it necessary to identify and analyze not only linear, cause-effect relationships, but also non-linear or mediated ones. In fact, cause-effect relationships in the model presented here imply that the variables related to the production dimension directly affect the variables related to the organizational, health and social dimensions without any systematic influence of other variables. An estimated cause-effect relationship may not actually be the *true* effect since the model did not take into account a systematic and/or contextual influence, i.e. a certain phenomenon, a mediator, whose presence is typical in complex systems (Hair *et al.*, 2012). The nature of the cause-effect relationship can be fully and accurately understood by carrying out a mediation analysis.

Table 5 presents the results of such analysis, in which the statistical significance of the indirect effects is based on a bootstrap test. On the basis of these assumptions, we identified the following two situations for testing mediation hypotheses (Mehmetoglu and Venturini, 2021):

a. The bootstrap test of the indirect effect is significant, while the path coefficient is not significant. In this case, there is indirect-only mediation (i.e., full mediation).

b. Both the bootstrap test of the indirect effect and the path coefficient are significant, and their coefficients point in the same direction. In this case, there is complementary mediation (i.e., partial mediation).

By comparing direct and indirect (mediated) paths, we found that:

a. The direct path TW on EMP is not significant while the indirect effect is significant (full mediation). Hence, the variable WLB mediates between TW and EMP. In this perspective, the autonomy and decision-making freedom of the worker, based on a strong sense of mutual trust, commitment and achievement of results, is fully achieved thanks to the contribution of the variable WLB, which is an important aspect of any healthy work environment (Eeshwaroju *et al.*, 2020). In other words, employee empowerment can have a significant impact on work satisfaction, productivity and engagement. The hallmark of this approach is the willingness shown by leaders and managers to share power with their teams in order to achieve better results for the company and its employees, customers or clients.

b. Similarly, the direct path HOE on EMP is not significant while the indirect effect is significant (full mediation). Again, WLB mediates between HOE and EMP, ensuring the development of an organizational empowerment process, based on people's ability to express their own potential and to work maximizing effectiveness, in a climate that stimulates change and growth (Eeshwaroju *et al.*, 2020).

c. When either of the direct paths ME on WLB, HAI on WLB, or OP on EMP, and the bootstrap test of indirect effects are statistically significant (partial mediation), the following mediation hypotheses take place respectively:

    i. OP mediates between ME and WLB. The management efficiency and productivity of a company represent the basic tool behind the individual performance of workers, and enhance their individual merit. The employee's emotions and general temperament have a significant impact on job performance, decision-making skills, team spirit, leadership and turnover (McDermott *et al.*, 2021).

ii. OP mediates the relationship between HAI and WLB. This relationship can be seen at work in new organizational models based on the centrality of individuals and their well-being (Abubakar *et al.*, 2019).

iii. WLB mediates between OP and EMP. Here the health dimension is commonly considered to be a resource supporting productivity in organizations (Amick and Mustard, 2005; Hoel *et al.*, 2000; Kotera *et al.*, 2020).

d. The indirect effects of ME on EMP and HAI on EMP are more articulated because there are two paths going from ME to EMP, and from HAI to EMP. The first path is mediated in both cases by the single WLB variable. On the other hand, the second path is mediated by the variables OP and WLB, thus confirming how in a healthy organization a work process promotes and maintains a state of physical, mental and social well-being in its employees, which in turn translates into higher work productivity, efficiency and performance (Abubakar *et al.*, 2019). The mediation analysis is confirmed, because the bootstrap test of the indirect effects and the path coefficient are both significant, and their coefficients point in the same direction. The mediation effect is partial.

Table V. Mediation analysis (source: authors' elaboration).

Conclusions, Limitations of the Study and Future Research Directions

The present work, taking into account the holistic nature of the individual, focuses on the dimensions and on direct and indirect relationships among the variables defining the SW employee in an emergency context, such as the one marked by the pandemic. Our research has highlighted how the evolutionary dynamics of SW employees tend towards a reconceptualization of workspaces (HOE), a redefinition of time (TW) and emotions (ME), and a better balance between work and personal life (WLB), thus creating a greater space for social and community aspects (HAI) and determining a greater involvement in their working life (EMP). All this by evaluating the impact in terms of organizational and individual performance (OP), which push towards a greater flexibility in the labour market and a growth in investments and in the importance of work-life balance policies within the wider scenario of welfare measures. WLB becomes therefore an element of mediation that allows to evaluate a series of effects that in a traditional view of the smart working are not considered.

According to this perspective, SW can introduce a new win-win logic in the labour market, one capable of generating advantages for people, organizations and the entire social system, by allowing workers to better reconcile working times with their personal needs and with flexibility demands coming from companies, thus obtaining advantages and benefits in terms of both individual and organizational performance on the one hand, and personal well-being on the other. As the research showed, the new SW employee, supported of new technologies, is increasingly aware of improving his overall productivity by contextualizing his social existence - according to an isomorphic logic - with relation to the needs of his family and community.

The analysis was carried out trying to sketch a multidimensional SW employee profile, without operating any distinctions by gender, age, educational qualification or job position. The next step of the research will therefore be to verify whether or not there are different types of SW employees, sorted on the basis of certain socio-demographic characteristics of theirs, as well as to extend the analysis at national level. This will also allow to better elaborate on data heterogeneity, distinguishing between observed and unobserved heterogeneity, in order to make the findings and results achieved more robust.

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Appendix

Table AI. Table of factor loadings (source: authors' elaboration).

Table AII. Table of cross loadings (source: authors' elaboration).

Table AIII. Correlations between latent variables (source: authors' elaborations).

Table AIV. Heterotraitmonotrait ratio (HTMT) - Confidence intervals (source: authors' elaboration).

Table AV. Structural model path coefficients (source: authors' elaboration).

Table AVI. Summary of the structural model indices (source: authors' elaboration).

Figure 1. Ecosystems and dynamic capabilities (source: authors' elaboration).

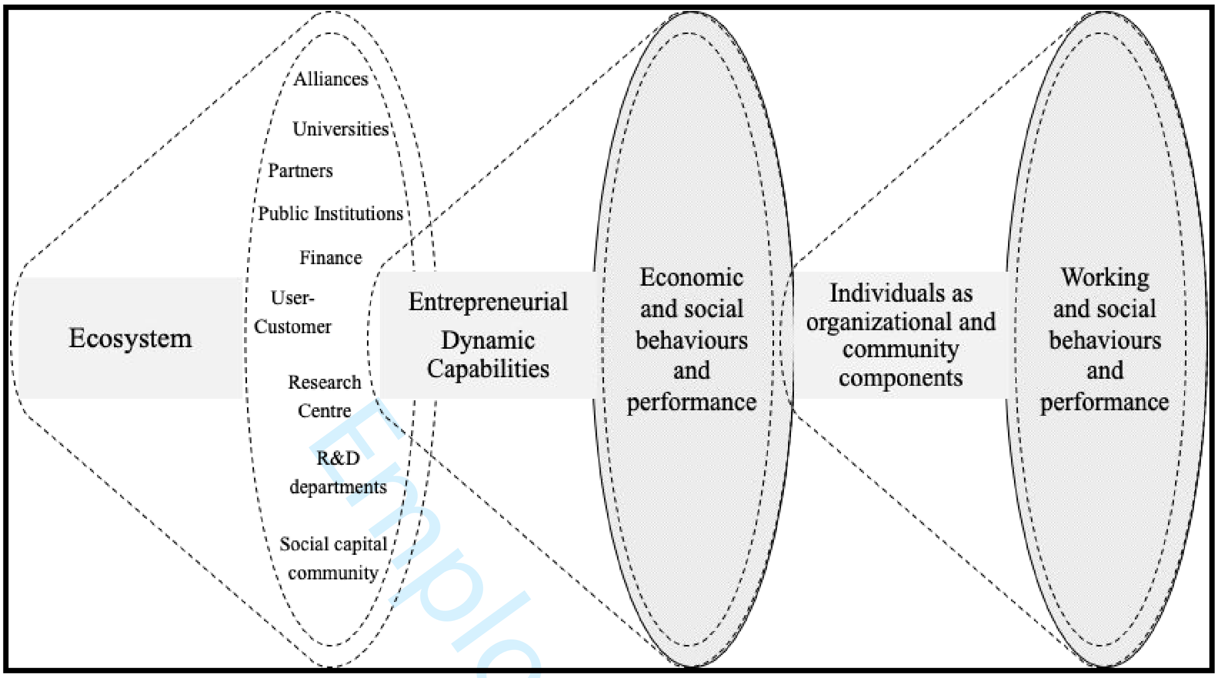

Figure 2. The emerging balance between work and private life (source: authors' elaboration).

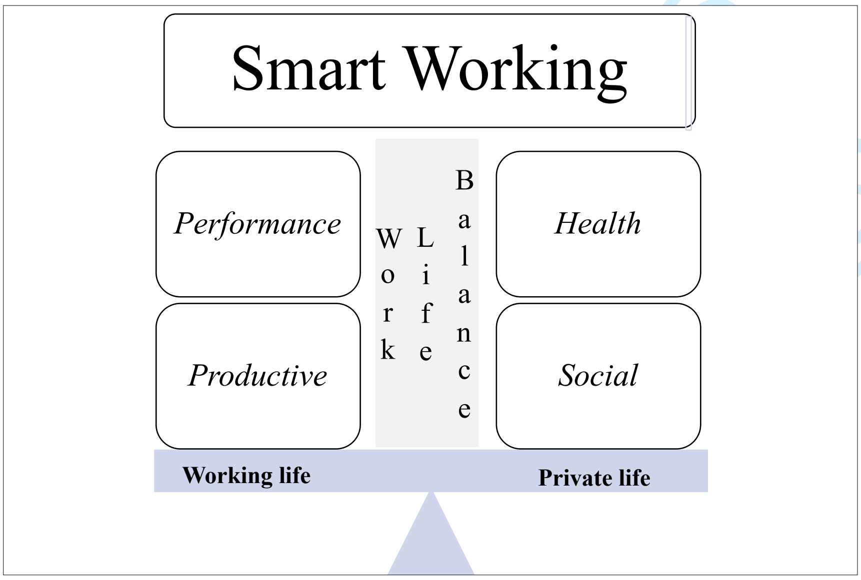

Figure 3. The smart working profile (source: authors' elaboration).

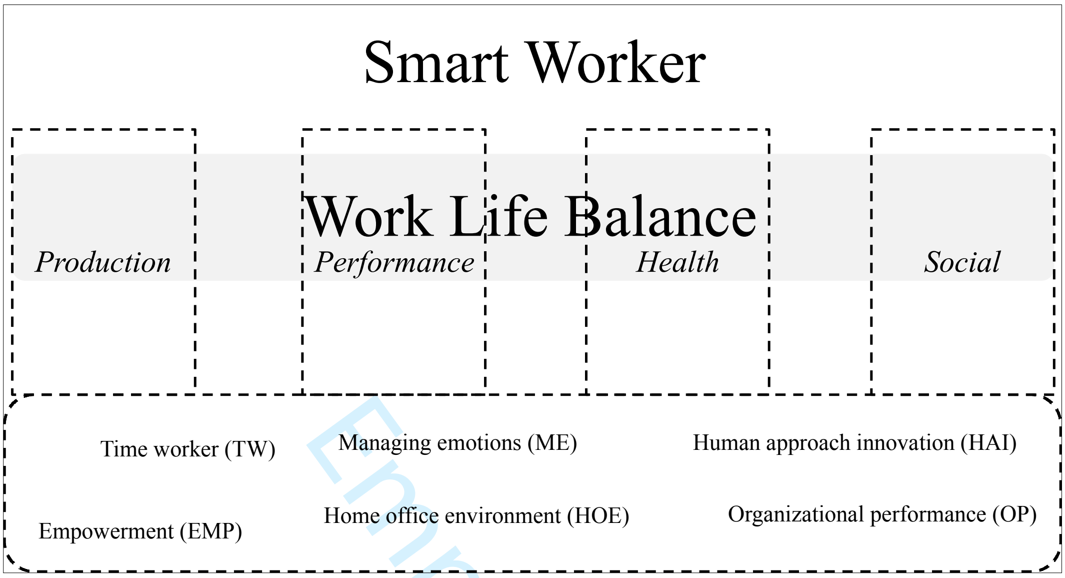

Figure 4. Relations between latent and manifest variables (source: authors' elaboration).

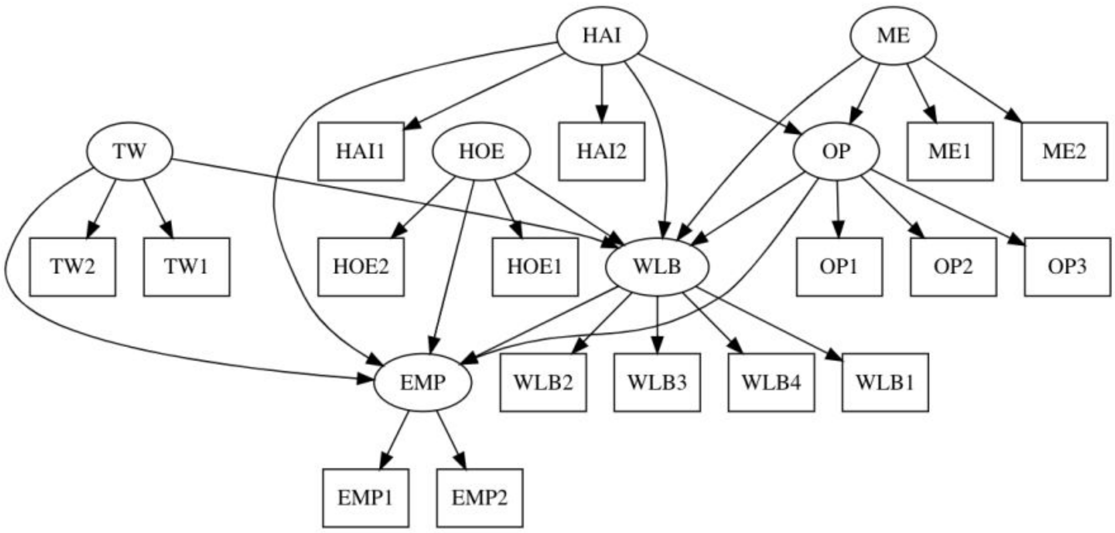

Figure 5. Graphical representation of the structural model with the loadings (source: authors' elaboration).

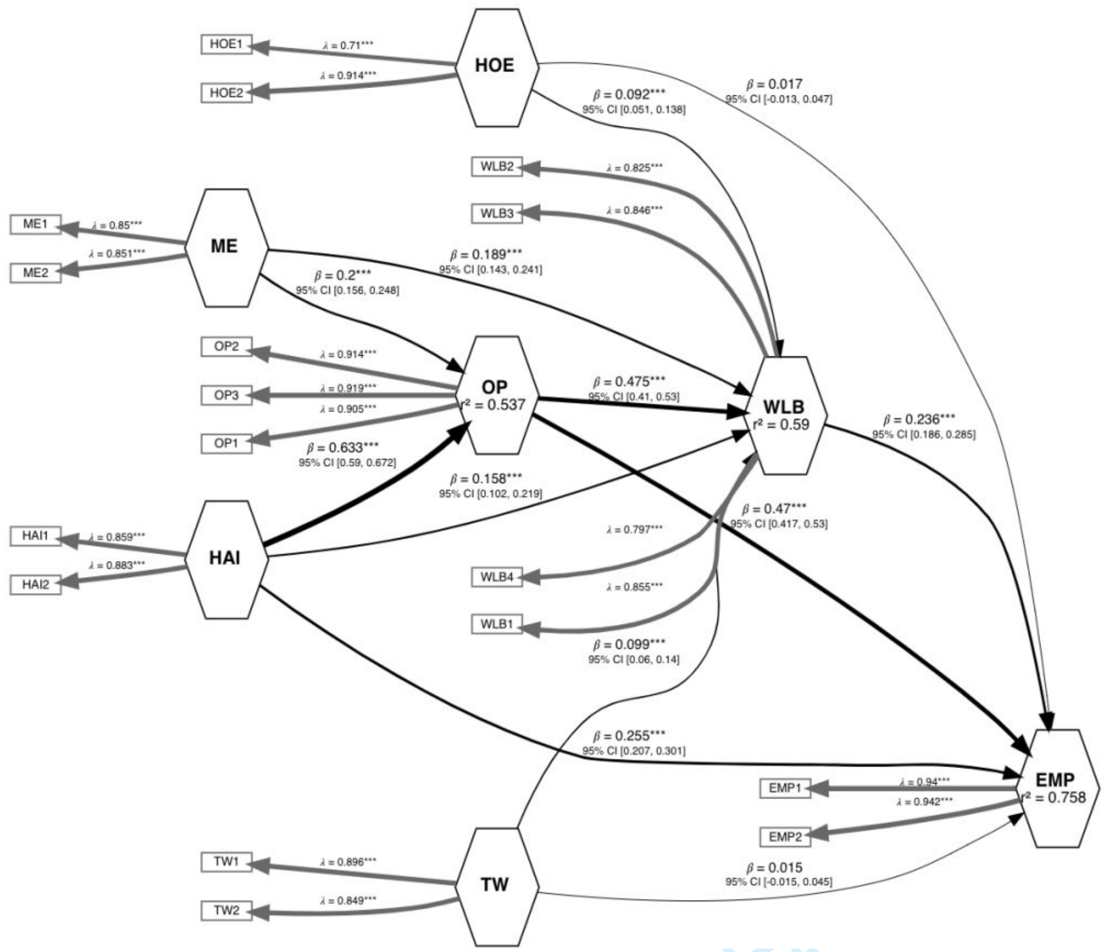

Table I. Theoretical Hypothesis (source: authors' elaboration).

Hypothesis		Dimensions
1.1	TW →WLB	Productive, Health
1.2	TW →EMP	Productive, Social
2.1	ME →OP	Productive, Organizational
2.2	ME →WLB	Productive, Health
3.1	HOE →WLB	Productive, Health
3.2	HOE →EMP	Productive, Social
4.1	HAI →OP	Productive, Organizational
4.2	HAI →WLB	Productive, Health
4.3	HAI →EMP	Productive, Social
5.1	OP →WLB	Organizational, Health
5.2	OP →EMP	Organizational, Social
6	WLB →EMP	Health, Social

Table II. Latent variables and descriptive statistics of indicators (source: authors' elaboration).

Construct	Dimension	Measures	Questions	Mean	Standard Deviation (SD)
TW	Production	TW1	During smart working, I am often contacted outside working hours	2.755	1.426
		TW2	With smart working, the number of urgent requests from my bosses and colleagues has increased	3.129	1.302
ME	Production	ME1	Smart working greatly increases my sense of loneliness	2.748	1.377
		ME2	For different reasons, my stress increases during smart working	2.530	1.266
HOE	Production	HOE1	I have the appropriate tools to work in smart working mode	4.054	1.137
		HOE2	I have a suitable space at home to work in smart working mode	3.670	1.324
HAI	Production	HAI1	With smart working, I feel my colleagues and my company trust me more	3.215	1.203

Construct	Dimension	Measures	Questions	Mean	Standard Deviation (SD)
		HAI2	Smart working allows me to have a better relationship with my colleagues	2.712	1.179
OP	Performance	OP1	Smart working allows me to better achieve my professional goals	3.394	1.209
		OP2	Thanks to smart working my work activities are more effective	3.628	1.204
		OP3	Thanks to smart working my work performance has improved	3.494	1.197
WLB	Health	WLB1	Smart working makes me feel freer	3.912	1.196
		WLB2	Thanks to smart working I can manage my work commitments with greater flexibility	3.885	1.187
		WLB3	Smart working has improved my physical well-being and the balance between work and private life	3.970	1.246
		WLB4	Smart working has improved my mental well-being	4.035	0.912
EMP	Social	EMP1	Smart working has increased my motivation at work	3.302	1.245
		EMP2	Smart working has increased my participation in the life of the company	3.345	1.226

Note: answer categories range from 1 (strongly disagree) to 5 (strongly agree).

Table III. Convergent Validity: Dimensionality Indices and AVE (source: authors' elaboration).

Construct	Number of items	Ca	DGr	eig.1 st	eig.2nd	AVE
TW	2	0.690	0.866	1.53	0.473	0.762
ME	2	0.619	0.840	1.45	0.552	0.724
HOE	2	0.533	0.811	1.36	0.637	0.669
HAI	2	0.683	0.863	1.52	0.481	0.759
OP	3	0.899	0.937	2.50	0.276	0.833
WLB	4	0.850	0.899	2.77	0.512	0.690
EMP	2	0.871	0.940	1.77	0.228	0.886

Table IV. Path coefficients (source: authors' elaboration).

Hypothesis	Path coefficients	Values	Mean Boot	Standard Error	Perc.025	Perc.975
Hypothesis 1.1	TW →WLB	0.0992	0.0989	0.0198	0.0586	0.1376
Hypothesis 1.2	TW →EMP	0.0148	0.0145	0.0151	-0.0160	0.0441
Hypothesis 2.1	ME →OP	0.2004	0.2005	0.0222	0.1558	0.2425
Hypothesis 2.2	ME →WLB	0.1898	0.1899	0.0244	0.1437	0.2392
Hypothesis 3.1	HOE →WLB	0.0937	0.0943	0.0215	0.0510	0.1352
Hypothesis 4.1	HAI →OP	0.6333	0.6338	0.0195	0.59263	0.6688
Hypothesis 4.2	HAI →WLB	0.1581	0.1579	0.0282	0.09956	0.2097
Hypothesis 4.3	HAI →EMP	0.2545	0.2550	0.0248	0.20533	0.3024
Hypothesis 5.1	OP →WLB	0.4743	0.4746	0.0308	0.41561	0.5374
Hypothesis 5.2	OP →EMP	0.4706	0.4698	0.0280	0.41670	0.5236
Hypothesis 6	WLB →EMP	0.2355	0.2358	0.0242	0.18673	0.2847

Note: statistical significance indicated by confidence intervals not containing 0.

Table V. Mediation analysis (source: authors' elaboration).

Hypothesis	Indirect Effects	Values	Perc.025	Perc.975	Path	Type of mediation
Hypothesis 1.2	TW → EMP	0.0234	0.0129	0.0347	TW→ WLB→EMP	Full mediation
Hypothesis 2.2	ME →WLB	0.0951	0.0709	0.1219	ME→OP→WLB	Partial mediation
Hypothesis 2.3	ME →EMP	0.1614	0.1306	0.1930	ME→WLB→EMP ME→OP→WLB→EMP	Partial mediation
Hypothesis 3.2	HOE →EMP	0.0221	0.0119	0.0324	HOE→WLB→EMP	Full mediation
Hypothesis 4.2	HAI →WLB	0.3004	0.2572	0.3461	HAI→OP→WLB	Partial mediation
Hypothesis 4.3	HAI →EMP	0.4060	0.3367	0.4794	HAI→WLB→EMP HAI→OP→WLB→EMP	Partial mediation
Hypothesis 5.2	OP →EMP	0.1117	0.0858	0.1389	OP→WLB→EMP	Partial mediation

Note: statistical significance indicated by confidence intervals not containing 0.

Table AI. Table of factor loadings (source: authors' elaboration).

Constructs	Measures	Weight	Loading	Communality	Redundancy
TW	TW1	0.632	0.901	0.812	0.000
	TW2	0.510	0.843	0.711	0.000
ME	ME1	0.591	0.853	0.727	0.000
	ME2	0.584	0.849	0.721	0.000
HOE	HOE1	0.433	0.708	0.502	0.000
	HOE2	0.757	0.915	0.837	0.000
HAI	HAI1	0.550	0.860	0.739	0.000
	HA12	0.757	0.915	0.837	0.000
OP	OP1	0.370	0.905	0.819	0.440
	OP2	0.363	0.914	0.836	0.449
	OP3	0.362	0.918	0.843	0.453
WLB	WLB1	0.292	0.851	0.725	0.429
	WLB2	0.289	0.821	0.674	0.398
	WLB3	0.290	0.848	0.719	0.425
	WLB4	0.335	0.802	0.643	0.380
EMP	EMP1	0.525	0.940	0.883	0.669
	EMP2	0.537	0.943	0.889	0.673

Table AII. Table of cross loadings (source: authors' elaboration).

Constructs	Measures	TW	ME	HOE	HAI	OP	WLB	EMP
TW	TW1	0.9010	0.309	0.0984	0.1498	0.1253	0.227	0.170
	TW2	0.8433	0.365	0.0828	0.0889	0.0509	0.215	0.106
ME	ME1	0.2196	0.853	0.2153	0.3699	0.4108	0.412	0.449
	ME2	0.4306	0.849	0.2534	0.2738	0.3379	0.477	0.359
HOE	HOE1	0.0391	0.147	0.7085	0.2022	0.1889	0.230	0.163
	HOE2	0.1156	0.279	0.9148	0.2725	0.3261	0.342	0.345
HAI	HAI1	0.1145	0.250	0.2353	0.8596	0.5910	0.512	0.611
	HA12	0.1291	0.404	0.2756	0.8827	0.6431	0.546	0.674
OP1	OP1	0.0956	0.421	0.2876	0.6567	0.9051	0.646	0.760
	OP2	0.0881	0.411	0.3152	0.6327	0.9141	0.650	0.744
	OP3	0.1042	0.372	0.2975	0.6515	0.9180	0.651	0.756
WLB	WLB1	0.2006	0.420	0.2377	0.4871	0.5797	0.851	0.627
	WLB2	0.1593	0.382	0.2667	0.5187	0.5975	0.821	0.605
	WLB3	0.2508	0.449	0.2805	0.4518	0.5150	0.848	0.576
	WLB4	0.2277	0.475	0.3914	0.5516	0.6571	0.802	0.627
EMP	EMP1	0.1485	0.429	0.3031	0.7007	0.7731	0.672	0.940
	EMP2	0.1554	0.465	0.3220	0.6896	0.7812	0.711	0.943

Table AIII. Correlations between latent variables (source: authors' elaborations).

	TW	ME	HOE	HAI	OP	WLB	AVE
TW							0.762
ME	0.381						0.724
HOE	0.104	0.275					0.669
HAI	0.140	0.379	0.294				0.759
OP	0.105	0.440	0.329	0.709			0.833
WLB	0.254	0.522	0.359	0.608	0.611		0.690
EMP	0.162	0.475	0.332	0.638	0.626	0.635	0.886

Table AIV. Heterotraitmonotrait ratio (HTMT) - Confidence intervals (source: authors' elaboration).

	Original Est.	**Bootstrap Mean**	**Bootstrap SD**	**T- statistic**	**2.5% CI**	**97.5% CI**
TW →ME	0.591	0.591	0.039	15.285	0.515	0.666
TW →HOE	0.154	0.161	0.043	3.563	0.080	0.251
TW →HAI	0.198	0.198	0.044	4.541	0.114	0.284
TW →OP	0.128	0.129	0.037	3.469	0.062	0.204
TW →WLB	0.329	0.329	0.037	8.986	0.257	0.400
TW →EMP	0.203	0.203	0.039	5.165	0.123	0.279
ME →HOE	0.450	0.451	0.048	9.303	0.357	0.546
ME →HAI	0.576	0.576	0.041	14.007	0.496	0.658
ME →OP	0.589	0.589	0.034	17.179	0.522	0.656
ME →WLB	0.716	0.716	0.031	22.765	0.655	0.779
ME →EMP	0.646	0.646	0.034	19.155	0.580	0.713
HOE →HAI	0.475	0.476	0.045	10.503	0.385	0.565
HOE →OP	0.451	0.451	0.040	11.249	0.373	0.530
HOE →WLB	0.508	0.509	0.042	12.163	0.426	0.590
HOE →EMP	0.452	0.452	0.040	11.377	0.373	0.528
HAI →OP	0.803	0.803	0.020	44.664	0.786	0.848
HAI →WLB	0.792	0.793	0.024	33.619	0.745	0.839
HAI→EMP	0.846	0.846	0.019	50.491	0.821	0.883
OP →WLB	0.808	0.808	0.017	48.820	0.774	0.839
OP→EMP	0.833	0.832	0.012	68.948	0.809	0.855
WLB→EMP	0.850	0.851	0.015	55.641	0.821	0.880

Note: statistical significance indicated by confidence intervals not containing 1.

Table AV. Structural model path coefficients (source: authors' elaboration).

$OP	Estimate	Standard Error	t value	Pr(>|t|)
Intercept	-6.36e-17	0.0197	-3.23e-15	1.00e+00
ME	2.00e-01	0.0213	9.41e+00	2.38e-20
HAI	6.33e-01	0.0213	2.97e+01	7.84e-146
$WLB	**Estimate**	**Standard Error**	**t value**	**Pr(>|t|)**
Intercept	1.01e-16	0.0185	5.45e-15	1.00e+00
TW	9.92e-02	0.0202	4.92e+00	9.71e-07
ME	1.90e-01	0.0225	8.42e+00	1.06e-16
HOE	9.38e-02	0.0199	4.70e+00	2.86e-06
HAI	1.58e-01	0.0266	5.95e+00	3.50e-09
OP	4.74e-01	0.0277	1.72e+01	4.38e-59
$EMP	**Estimate**	**Standard Error**	**t value**	**Pr(>|t|)**
Intercept	-5.46e-17	0.0143	-3.82e-15	1.00e+00
TW	1.49e-02	0.0149	1.00e+00	3.17e-01
HOE	1.65e-02	0.0154	1.07e+00	2.85e-01
HAI	2.55e-01	0.0208	1.23e+01	1.30e-32
OP	4.71e-01	0.0236	1.99e+01	2.29e-76
WLB	2.36e-01	0.0217	1.08e+01	3.31e-26

Table AVI. Summary of the structural model indices (source: authors' elaboration).

	Type	R^2	AVE
TW	Exogenous	0.000	0.762
ME	Exogenous	0.000	0.724
HOE	Exogenous	0.000	0.669
HAI	Exogenous	0.000	0.759
OP	Endogenous	0.537	0.833
WLB	Endogenous	0.591	0.690
EMP	Endogenous	0.758	0.886